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CHRONIC NONSPECIFIC NEPHRITIS

CLINICAL OBSERVATIONS ON FORTY CHILDREN WITH RESULTS OF TREATMENT ON FULL DIETS

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Our purpose in this report is to record our experience with chronic nonspecific nephritis from the standpoint of its clinical manifestations and treatment. The use of the term "nonspecific" nephritis is, we admit, not ideal and we hope not permanent, but it is the best name we could think of to indicate our present concept of the condition. One might choose from the literature any one of the many names that have been applied to it, such as chronic diffuse nephritis, chronic glomerular nephritis, chronic glomerulotubular nephritis, glomerular nephritis with nephrotic component, or others, but all these terms have the objectionable feature that they stress the anatomic location of supposed lesions in the kidneys and, therefore, represent diagnostic guesses that are unnecessary. We feel that the adoption of clinically descriptive terms in classifying disease in living patients is a move toward clearer thinking. When it has been clearly shown that a certain clinical picture always accompanies a specific anatomic lesion it may be justifiable to adopt an anatomic terminology, but even then we fail to see its purpose. An etiologic nomenclature is more serviceable. Although it may be imperfect, the term nonspecific implies, truthfully, that we do not know the cause and is intended to include the implication that a more accurate name may supplant it when justified.

The material on which this report is based consists of forty patients, all but one of whom were seen in the nephritic service at the Children's Memorial Hospital, and all of whom were cared for by us between the years 1920 and 1932. The diagnostic criteria by which these patients were separated from other nephritic patients are so clear that practically no exceptions have been made. Since all these patients manifested all the important diagnostic features, they may be described as comprising a sharply cut clinical group. All presented the following clinical signs and laboratory manifestations at some time in the course of their illness: (1) edema, (2) arterial hypertension, (3) increase in the nonprotein nitrogenous constituents of the blood, (4) hematuria, (5) marked albuminuria, (6) cylindruria, and (7) a rapidly fatal or chronic course. It should be emphasized, however, that these patients did not all show all these abnormalities all the time. Since this paper attempts to report a personal study of the clinical progress of a large number of patients with chronic nephritis over a period of years, it is unique (chart 1).

Read before the Chicago Pediatric Society, Feb. 21, 1933.

This work would have been impossible without the most efficient sort of cooperative work by the nursing staff and the Social Service Department of the Children's Memorial Hospital.

LITERATURE

We have found no reports in the literature which result from the prolonged observation of a series of patients with this type of nephritis. Among the first papers on chronic nephritis in childhood to appear were those of Gull and Sutton [1] in 1872, and of Guthrie [2] in 1896. Sawyer [3] in 1903 reported twenty-eight cases of chronic nephritis and later [4] listed forty-six cases in tabular form. From his brief clinical description it would appear that these were instances of what would now be termed renal infantilism or childhood nephrosclerosis. Greene [5] also reported cases which we believe belong in this classification, which was thoroughly reviewed recently by Mitchell.[6] It is quite likely that some of Greene's patients may have had syphilis with nephritis.

Decker,[7] Heubner [8] and Berkley and Lee [9] each report a case of malignant hypertension in a child. Heubner cites his as occurring once in seventy-three instances of nephritis. None of our cases could be so classified.

If one were to judge from the literature of the last two decades, it would appear that chronic nephritis frequently ensued on acute hemorrhagic nephritis, a conclusion that we have reason to doubt. James [10] reports sixty-seven cases of acute nephritis, nine of which terminated in chronic disease of the kidneys. He noted a tendency to exacerbations with intercurrent infections. Hill [11] considered that acute nephritis might be followed by subacute or chronic nephritis. Heubner,[8] who gives a somewhat elaborate classification of chronic nephritis, considers that almost all cases

1. Gull, W. W., and Sutton, H. G.: On the Pathology of the Morbid State Commonly Called Chronic Bright's Disease with Contracted Kidney ("Arterio-Capillary Fibrosis"), Medico-Chirurgical Transactions **55**: 273, 1872.
2. Guthrie, L. G.: Chronic Interstitial Nephritis in Childhood, Lancet **1**: 585 and 728, 1897.
3. Sawyer, J. E. H.: Chronic Interstitial Nephritis in Children, Birmingham M. Rev. **54**: 511 and 549, 1903.
4. Sawyer, J. E. H.: The Etiology of the Granular Kidney of Childhood, St. Thomas's Hosp. Rep. **35**: 459, 1906.
5. Greene, C. H.: Chronic Diffuse Nephritis in Childhood, Am. J. Dis. Child. **23**: 183 (March) 1922.
6. Mitchell, A. G.: Nephrosclerosis (Chronic Interstitial Nephritis) in Childhood, Am. J. Dis. Child. **40**: 101 (July); 345 (Aug.) 1930.
7. Decker, B. L.: Progressive Loss of Vision, New England J. Med. **204**: 830 (April 16) 1931.
8. Heubner, O.: Ueber chronische Nephrose in Kindesalter, Jahrb. f. Kinderh. **77**: 1, 1913.
9. Berkley, H. K., and Lee, J. M.: Hypertension in Nephritis in Childhood with a Study of Ninety-Three Cases, Am. J. Dis. Child. **13**: 354 (April) 1917.
10. James, R. F.: The Prognosis of Nephritis in Childhood, J. A. M. A. **76**: 505 (Feb. 15) 1921.
11. (a) Hill, L. W.: Studies in Nephritis in Children: II. Clinical Considerations of Classification, Etiology, Prognosis and Treatment, Am. J. Dis. Child. **17**: 270 (April) 1919; (b) Mild Chronic Nephritis in Children, J. A. M. A. **75**: 396 (Aug. 28) 1920; (c) Nephritis in Children, M. Clin. North America **2**: 1419 (March) 1919.

in childhood may be traced to an infection. Morse [12] says, "It [chronic nephritis] is almost invariably the result of a previous acute attack." We would like to point out at this time that, of course, there has to be an onset to any chronic disease and that, if the first attack is considered to be acute nephritis, all chronic cases must follow acute nephritis. The point we are anxious to clarify is whether true instances of typical postinfectious nephritis result in chronic nephritis. It may well be that in this antecedent acute infection we have a differential point useful in separating benign from chronic or sclerosing disease. We are not sure, from an observation of 300 cases of nephritis, that chronic disease often follows the postinfectious type.

However, James [10] reports nine cases of chronic disease which followed postscarlatinal nephritis. Calvin and Rosenblum [13] report two, the symptoms of which are similar to ours. Hill,[11a] DeBuys [14] and Boyd,[15] who discuss symptoms, all agree that acute exacerbations are often coincident with infectious processes. All feel that the prognosis is grave. Hill [16] describes cases which he calls a "mild type." He feels that function tests aid in the prognosis. The treatment has not been stressed, owing undoubtedly to the bad prognosis, but Morse [17] discusses the indications for Edebohl's decapsulation operation. Evidently the value of this procedure has not stood the test of time, for it is seldom resorted to now.

Pediatric textbooks devote considerable time to this subject and the accounts are quite similar, so that individual references need not be made here. Most authors agree that chronic nephritis may appear insidiously without antecedent disease but stress the influence of acute hemorrhagic nephritis as an etiologic factor. Hoobler [18] quotes the literature to show that there is not sufficient evidence to prove that postscarlatinal nephritis is a forerunner of adult nephritis and concludes that there is probably no relationship between childhood and adult renal disease. All books stress the importance of protein restriction and removal of foci of infection in the treatment.

Guild [19] has recently reviewed thirty-four cases of acute hemorrhagic nephritis, and, on examination twelve years after the acute disease, she found all patients well and leading a normal life except one who had rheumatic heart disease. None showed renal impairment in function tests. One boy died four years after his nephritis and was examined post mortem. There were no gross or microscopic abnormalities in the kidneys. This work tallies with ours in that we fail to find that acute postinfectious hemorrhagic nephritis commonly leads to chronic disease.

DESCRIPTION OF THE CLINICAL COURSE

It is difficult to make any sweeping statements concerning the clinical course of any disease that exhibits as varied a picture as does this one, but certain facts stand out so prominently and are so often misunderstood that they need clarifying. It may be said that as a rule these children presented all the clinical signs and laboratory manifestations enumerated during the early stages: edema, hypertension, increase in the nonprotein nitrogenous constituents of the blood, hematuria, marked albuminuria, and cylindruria. If death did not occur during the first few months, these manifestations fluctuated widely in severity, tending toward progressive disability (chart 2). After a period of years unless intercurrent infection caused death, renal insufficiency dominated the picture, and the patient died of true uremia often combined with or precipitated by marked acidosis. This fluctuating course was often sharply punctuated or terminated by relapses due to cerebral complications or coincident with intercurrent infections. While using the low protein diet we had never seen the process brought to a standstill, all patients remaining chronic invalids. With changes in treatment later to be described, how-

Abnormal Conditions Found at Autopsy *

Patient	Anasarca	Ascites	Hydrothorax	Hydropericardium	Edema of Lungs	Bronchopneumonia	Peritonitis	Pleuritis	Septicemia	Mastoiditis, Sinus Thrombosis and Meningitis	Lung Abscess	Skin Abscesses	Cellulitis	Pericarditis
1	+	+	..	..	..	..	..	..	..	..	..	+	..	..
6	..	..	..	..	..	+	+	..	..	..	+	..	..	..
18	..	..	..	..	..	+	..	..	..	..	..	..	..	+
23	+	+	+	..	..	+	..	..	+ Pneumococcus	..	..	..	..	..
24	+	+	..	..	..	..	..	..	+ Strep. Hem.	..	..	..	+	..
30	+	..	..	..	..	+	+	+	..	..	..	..	..	..
32	..	..	..	..	+	+	+ Strep. Hem.	+ Strep. Hem.	+ Strep. Hem.	+ Strep. Hem.	..	..	..	..
33	+	+	+	..	..	..	+ Strep.	+ Strep.	..	..	..	..	..	+
35	+	..	..	..	+	+	..	+	..	..	..	..	..	+
36	+	..	+	..	..	..	+ Strep. Vir.	..	+ Strep. Vir.	..	..	..	+	..
37	+	..	+	+	+	+	..	..	..	..	..	..	..	..

* These infections are not necessarily the cause of the nephritis; the authors think it quite likely that they are a result of it.

12. Morse, J. L.: Nephritis in Childhood, J. Maine M. A. **12**: 39 (Sept.) 1921.
13. Calvin, J. K., and Rosenblum, Philip: An Unusual Type of Chronic Nephritis in Childhood, Arch. Pediat. **47**: 250 (April) 1930.
14. DeBuys, L. R.: Nephritis in Childhood, South M. J. **14**: 362 (May) 1921.
15. Boyd, G. L.: The Course, Prognosis and Treatment of Chronic Diffuse Nephritis in Children, Canad. M. A. J. **21**: 679 (Dec.) 1929.
16. Hill, L. W.: Studies in the Nephritis of Children: I. Functional Tests, Am. J. Dis. Child. **14**: 267 (Oct.) 1917.
17. Morse, J. L.: Edebohl's Operation in Nephritis in Children, J. A. M. A. **69**: 525 (Aug. 18) 1917.
18. Hoobler, B. R., in Abt, I. A.: Pediatrics, Philadelphia, W. B. Saunders Company **4**, 1924.
19. Guild, Harriet G.: The Prognosis of Acute Glomerular Nephritis in Childhood, Bull. Johns Hopkins Hosp. **48**: 193 (April) 1931.

ever, we have witnessed a few apparent recoveries which are most encouraging. In order to present our observations in an orderly manner, we shall consider the salient points individually.

1. *The Onset.*—In the majority of instances, the disease came on insidiously with presenting symptoms of edema, albuminuria and hematuria. Five patients gave a definite history of acute preceding infection, although we cannot be certain that nephritis did not antedate the infection. Six others described an ordinary cold or other questionable mild infection preceding the onset. One had a severe urticaria just before the onset. The remaining twenty-eight gave absolutely no history of acute antecedent infection of any kind. Headache, nausea and nocturia were frequent complaints. This type of onset contrasts sharply with that found in acute postinfectious hemorrhagic nephritis and makes us doubt the identity or chronological relationship of the two diseases. Careful history taking was necessary to bring out this point because, as might be expected, these patients were often first seen during acute exacerbations coincident with infectious processes. However, a careful check of the history usually revealed that symptoms of the nephritis preceded the acute infection. This point is of utmost importance in making a prognosis, because, if it can be definitely established that acute bacterial infection has preceded the first symptom of nephritis, one is justified in assuming a good prognosis and in excluding the patient from the classification of nonspecific nephritis.

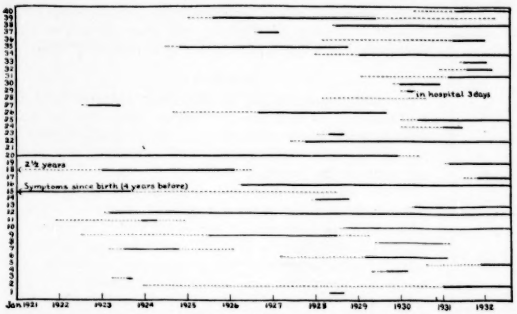

Chart 1.—Duration of observation and duration of illness of all patients in this group. The broken line shows illness not supervised in this clinic. The heavy line shows illness while under observation. The beginning and end of each line shows the approximate onset and termination, respectively.

2. *Edema.*—Edema was usually found in the early stages but was often absent during the major portion of the illness (chart 3). All cases exhibited it at some time or other. The degree of edema varied considerably but usually was marked, resembling that seen in nephrosis. Moreover, as in nephrosis, the edema fluctuated for several months or a few years in some of the cases. We feel that the good response to salt free diets in this disease is an important differentiating point. In chronic nephritis salt restriction often controlled the edema fairly well, while in nephrosis we have never satisfied ourselves that it had therapeutic value. Many of our patients who seemed to require a salt free regimen over a few years finally became "dry," after which salt was well tolerated in large amounts. Even severe infectious processes have failed to produce edema in this "dry" stage in patients who formerly puffed up with each minor ailment. We feel that it should be emphasized again that few of these patients failed to show edema relatively early in the disease and that several of them were without it during the entire latter part.

3. *Hypertension.*—This sign, too, was usually present in the early stages and fluctuated to a marked degree. In general, it subsided after each exacerbation to a point in or just above the upper range of normal. Unfavorable cases showed a tendency to rise gradually toward the end of the disease, and excessively high readings were of bad omen unless they were associated with symptoms of cerebral edema. At the conclusion of such an attack the pressure dropped to its former level. Acute cerebral complications did not occur as often in chronic nephritis as in the acute postinfectious type, but they were just as amenable to treatment. The advent of such symptoms must not be confused with terminal uremia, true renal insufficiency. In the latter event no treatment is of use, whereas in the former, adequate administration of fluids and magnesium sulphate by mouth, muscle or vein is a life-saving procedure. Four of our patients had acute cerebral attacks of this type.

4. *Nonprotein Nitrogen Values of the Blood.*—Some elevation of the figures for the nonprotein nitrogenous constituents of the blood was often but not always found at the first observation, and this tended to fluctuate with the other symptoms. Late in the disease it rose, paralleling to a certain extent the course of the blood pressure. Many patients went on for years with approximately normal values, only to have them rise with a terminal insufficiency. The figures in children do not rise as high as they do in adults, however.

5. *Hematuria.*—This was usually present to a marked degree early in the disease and, although gross hematuria rarely existed for a long period, it appeared constantly in some. Such patients did poorly. On the other hand, hematuria was absent for prolonged periods in some patients even at the onset. This fact accounts for much confusion in diagnosis, especially in the differentiation from nephrosis. Careful history taking with hematuria in mind, prolonged observations, and the finding of other differentiating abnormalities such as hypertension and high blood nonprotein nitrogen values

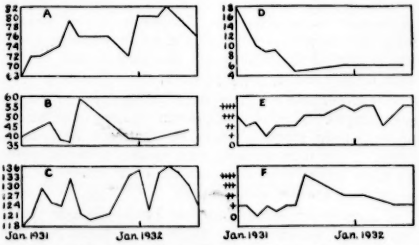

Chart 2.—Fluctuation in various factors during the observation of one patient over a period of about eighteen months. *A*, weight; *B*, nonprotein nitrogen; *C*, systolic blood pressure; *D*, Mosenthal variation; *E*, albuminuria; *F*, hematuria.

will usually decide the question in a clear-cut manner. The fact that the hematuria is often transient, however, is responsible for many mistakes in diagnosis and prognosis.

6. *Albuminuria.*—The amount of albumin was excessive, with rings 1 cm. in thickness with Exton's reagent the rule rather than the exception. Great misunderstanding exists as to the constancy of this laboratory observation. Our experience with this group leads us to believe that the albuminuria is practically constant.

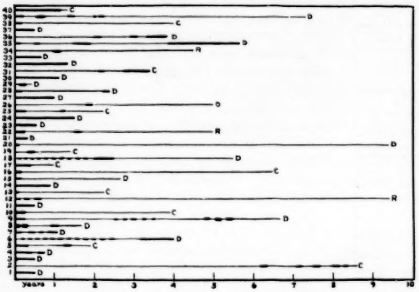

Chart 3.—Incidence of edema in all the patients. The heavy parts of the lines represent periods in which the patient was edematous and the light parts represent periods during which edema was not present. It will be noted that edema was more common in the early stages of the disease than in the later periods. *D*, death; *R*, recovery; *C*, chronic.

Records of patients who now have albuminuria show that, in a total of 1,479 reactions reported, only 26 were negative (0.18 per cent). The negative results have been so rare that we feel they may as well be ascribed to mistakes in technic or identity of the samples as to exceptions to the rule that the urine always shows albumin in this condition. The statement often made that the urine in chronic nephritis frequently clears up only to show a recurrence of albuminuria later must be challenged. Only two patients of the entire group showed positive albumin reactions following two or more consecutive negatives. Moreover, in our patients who have recently recovered, the albuminuria persisted long after all the other signs disappeared and, having once disappeared in such patients, did not return.

7. *Cylindruria.*—Casts were always found in the early stages. They were a constant finding in all of our patients until recent changes in treatment were instituted. Since then we have seen patients in whose urine no casts have been demonstrable over many months, in spite of marked albuminuria.

8. *Results of Renal Function Tests.*—In our work, because all patients were children, we used only the more easily applied tests. These included the two-hour specific gravity, water excretion and phenosulphonphthalein tests. As might be expected, the water excretion test followed the course of edema rather closely. In most instances the variation of specific gravity became less than ten points soon after the onset. The variation increased somewhat with improvement in some of the patients, but a normal concentration response was relatively rare. The specific gravity tended to become lower and lower as the disease progressed. The phenolsulphonphthalein excretion was markedly diminished rather early in most cases, and, surprisingly, some patients lived on for years with excretions of only 5 to 15 per cent of the dye.

9. *Autopsy Results.*—Twenty-seven patients died. Twelve of these were examined post mortem. A complete discussion of the results cannot be attempted here, but two facts stand out in bold relief: First, the renal lesions were absolutely diffuse, no parts of the organs being spared in the degenerative and sclerosing processes. Second, at the time of death the patients were often grossly infected in various parts of the body, whereas until a relatively short time before death little clinical evidence of chronic microbic infection was demonstrable, as indicated in the accompanying table.

COMMENT

Critical consideration of the facts just outlined in the clinical picture and pathologic anatomy of this disease made us question some of the generally accepted theories as to its pathogenesis and influenced our management of the patients.

When we noted that only an occasional patient with chronic nonspecific nephritis gave a history of acute postinfectious nephritis at the onset and that even the patients most severely ill with postinfectious nephritis usually made complete and permanent recoveries, we began to doubt that we were dealing with identical processes. It seemed possible that the pathologic lesion in acute postinfectious hemorrhagic nephritis might be of a more benign nature than the progressive sclerosis found in chronic nonspecific nephritis. We began to think of chronic nephritis as a separate clinical entity and attempted, we think with considerable success, to differentiate it even in the early stages, before chronicity alone established its nature. This attitude made it necessary for us to look for some other cause than microbic infection, and, in casting about, we noted that almost all

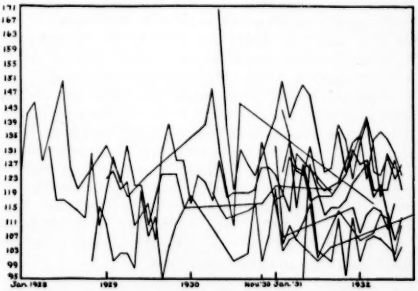

Chart 4.—Fluctuations in systolic blood pressure over a period of four and a half years in the patients who were given the high protein, high vitamin diet. It will be noted that there is no marked elevation in blood pressure following this change in November, 1930.

cases were found in dispensaries; that the disease was a great clinical rarity among the well-to-do. Moreover, the patients were malnourished and surrounded by poor hygienic environment.

In the fall of 1930, having arrived at this stage in our observations, we were faced with a serious problem. The morale of the clinic was at a low ebb. All the patients with chronic nonspecific nephritis were receiving a low protein diet and many were forced to eliminate salt as well. Almost all were clinically ill and obviously dying off in spite of our good intentions.

They were a miserably ill, unhappy group of children. It was no pleasant duty to go on week after week and watch this process complete its degenerative course. Physicians, nurses, social service workers and patients had no heart in the job.

Therefore, in October, 1930, we resolved to make a radical change. All preconceived ideas of diet were discarded and we decided to treat these children exactly as we would any other group in as poor a nutritional state and to make every effort to improve their nutrition and their physical and mental hygiene. The following

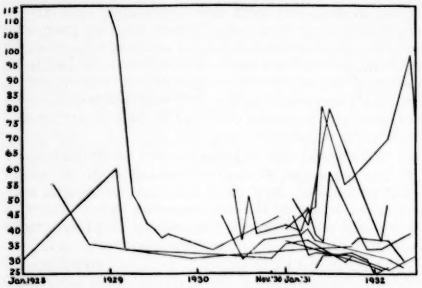

Chart 5.—Fluctuations in nonprotein nitrogen in the patients given the high protein, high vitamin diet. It will be noted that in only one instance is there an elevation after the change in diet.

reasons were responsible for the decision: 1. The disease manifested some of the evidences of a nutritional, hygienic or deficiency disease. 2. Our previous treatment had been futile, if not actually harmful. 3. We hoped to make the remaining months or years of the patients' lives more endurable by giving them the satisfaction of eating palatable food just as did other folk.

The following measures were taken: All patients were put on a diet which we hoped might compensate for any deficiency. Meat or eggs were ordered three times daily; salt was allowed to all those who were not definitely edematous, and all the vitamins we had ever heard of were included in their diet. Cod liver oil, yeast, orange juice, and raw and cooked vegetables were prescribed. Wherever this could not be accomplished at home, we invoked the help of charitable organizations or took the patients into the hospital. In addition to this, every effort was made to improve the general hygienic environment of the children, including sun baths in the summer, fresh air, and the like.

While this was undertaken with some slight misgivings on account of precedent, we did not feel too guilty on account of the ten years of experience we had had on the regimen prescribed by precedent. The results following the change were so rapidly noticeable, however, that within three months doubt changed to surprise. All the patients began to look better. One returned with specimens of urine that were, and have since been, constantly free from albumin. Since that time two more have become albumin free, a pleasure we had never before experienced. One by one the children became able to reenter school. Hemoglobin estimations rose along with the weight curves, and this without edema. Clinical improvement in general health was noted within a few weeks.

With still greater satisfaction, we found that in general neither the blood pressure (chart 4) nor the blood nonprotein nitrogen values (chart 5) rose with this change.[20] In fact, the tendency was toward a decline in many instances. While the albuminuria has continued in most children, it tended to decrease in amount and disappeared entirely in three instances. The red blood cells have disappeared in eleven of fourteen living patients, and casts are now a relatively rare observation among them.

Of the ten patients put on this regimen in October, 1930, only two have died. While apparently improving, they left our care and were put on low protein, salt free diets in other institutions. One patient died under such treatment, and the other returned to us in a moribund condition to die in acidosis of true uremia.

We have now under observation in the dispensary thirteen patients, twelve of whom have been receiving this diet for over two years. All are attending school regularly. With one exception, all are in an excellent nutritional state, and the weight, hemoglobin and tissue turgor are good (chart 6). The one child who is not in good condition was in desperate shape before the new regimen was instituted but has been able to resume school work in spite of his severe nephritis. He is the only patient in this group who shows a progressive loss of renal function.

As a result of two years' experience with this dietary and hygienic regimen, we can report that the majority of our patients have shown definite clinical improvement, that three have shown complete disappearance of clinical evidence of the disease, that one is continuing the downward course at a retarded rate, and that the death rate has been decidedly reduced.

SUMMARY

A brief description of the clinical features exhibited by forty children with chronic nonspecific nephritis is given, including the results of treatment over ten years with low protein diets.

After the institution of high protein, high vitamin diets and improved hygienic care, definite clinical improvements were seen.

This high protein diet did not cause elevation of the blood pressure or increase the nonprotein nitrogenous constituents of the blood in the group as a whole.

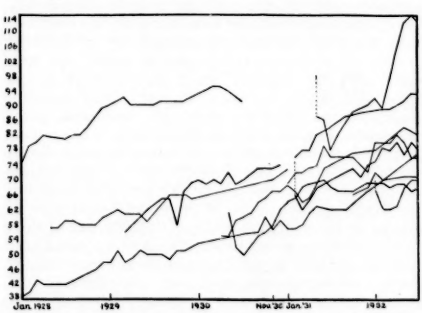

Chart 6.—Weight increment in these patients over a period of four and a half years. The vertical broken lines show the initial loss of weight due to edema.

20. Recent observations on one patient in the stage of terminal renal insufficiency seem to show that, when the nitrogenous retention is marked, added protein may increase the nonprotein nitrogen of the blood. This was not the case in the instances with moderate retention.

It is suggested that this type of chronic nephritis is due to some hygienic or dietary cause rather than to microbic invasion and that infection may be the result of the disease rather than its cause.

We are describing a children's disease; we do not know that this identical condition exists in adult life.

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PURPURA HAEMORRHAGICA IN CONGENITAL SYPHILIS FOLLOWING ARSPHENAMINE

REPORT OF TWO CASES

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Studies of the toxic effects of the arsphenamine derivatives have received a prominent place in the literature as the extent of the usage of these drugs has increased in the treatment of syphilis. To the list of untoward reactions caused by them have been added the blood dyscrasias. That a selective injury of one of the elements of the hematopoietic system may be caused by the arsphenamine preparations is shown by the reports of (1) cases of granulocytopenia, in which there results a suppression of the granulocytic series, or (2) of cases of purpura haemorrhagica in which a thrombocytopenia is the conspicuous feature, or (3) of cases of aplastic anemia in which there is a generalized depression of all types of blood formation. The severity of the blood disorder is variable; in some there is complete recovery with restoration to a normal blood picture; in others, the outcome is fatal. Fortunately, blood dyscrasias resulting from antisyphilitic treatment with the arsphenamines are infrequently encountered.

Analytic studies in two papers of recent date have dealt with the reported cases of postarsphenamine blood dyscrasias. Loveman,[1] in April, 1932, including Farley's series,[2] reviewed sixty-four cases with thirty-one deaths, or a mortality of 48 per cent. Thirty of his patients had aplastic anemia, of whom eighteen died, a mortality of 60 per cent; fourteen had purpura haemorrhagica with five deaths, or 36 per cent mortality, and fifteen were examples of granulocytopenia with six deaths, or 40 per cent mortality. In thirty-five of these patients neoarsphenamine was the drug employed with seventeen deaths, arsphenamine in ten patients with five deaths, sulpharsphenamine in six with three deaths, silver arsphenamine in two with one death, and mixed arsphenamine therapy in eight with four deaths; arsphenamine preparations were used but the kinds were not stated in three patients with one death.

McCarthy and Wilson[3] in November, 1932, were able to collect from the literature seventy-nine cases of arsphenamine poisoning, including many of those reported by Loveman. Sixty-five of these were classified as follows: 1. Thrombocytopenic purpura, twelve cases, in all of which recovery occurred; in seven of these cases neoarsphenamine was the last drug used and in the remaining five cases sulpharsphenamine was the last drug used. 2. Associated thrombocytopenia and granulocytopenia, seven cases, in one of which death occurred; in five of these cases (including the fatal one) neoarsphenamine was used, in one sulpharsphenamine and in one silver arsphenamine. 3. Granulocytopenia, twelve cases with four fatalities, or 33 per cent mortality; arsphenamine was the drug used in four cases, neoarsphenamine in five, sulpharsphenamine in one, and both neoarsphenamine and sulpharsphenamine in two. 4. Aplastic anemia, thirty-one definite and three probable cases with six recoveries, or a mortality of 83 per cent; in this group arsphenamine was used in twenty-two cases, sulpharsphenamine in five, both neoarsphenamine and sulpharsphenamine in one, and arsphenamine in four; in two cases the arsphenamine preparation was not specified. McCarthy and Wilson take care to point out that while the bulk of the blame for the toxic reactions has been placed on neoarsphenamine, this drug has been more generally used than others of the arsphenamine series. Relative to the total use of sulpharsphenamine, blood dyscrasias from this preparation are surprisingly frequent.

Our purpose in this paper is to report two cases of purpura haemorrhagica in children with congenital syphilis following the use of neoarsphenamine. These are the only examples of postarsphenamine blood dyscrasias of any kind occurring in the syphilis clinic of the Harriet Lane Home for Invalid Children of the Johns Hopkins Hospital. The records show that 1,825 children have been treated for syphilis in the Harriet Lane Home and a total of 25,950 treatments given from October, 1922, to January, 1933. Though no figures are available of the exact number of children who have received arsphenamine, nearly every child treated for syphilis receives arsphenamine at some time during the course of antisyphilitic treatment. It is apparent, therefore, that the incidence of postarsphenamine blood dyscrasias in children is extremely low.

PROTOCOLS

CASE 1.—A. R., a white boy, aged 6 years, was admitted to the hospital, March 1, 1932, shortly after an antisyphilitic treatment, with the diagnosis of a severe reaction to neoarsphenamine.

The boy was first seen in the outpatient department in August, 1927, four and a half years before (at the age of 1½ years). He was sent in to have a Wassermann test, which proved to be positive. It was learned at this time that both parents were syphilitic; the father had previously received antisyphilitic therapy and the mother died in October, 1927, of paralysis from syphilis, the exact nature of which could not be determined from the records. There was no family history of miscarriages or stillbirths.

The physical examination of the patient at the time when first seen was reported as not showing any of the stigmas of congenital syphilis. There was no general glandular enlargement and the liver and spleen were not felt. A second observer, three weeks after the first examination, noted slight general glandular enlargement and a palpable liver and spleen.

The first antisyphilitic therapy was started, Sept. 13, 1927. The child was given 0.19 Gm. of sulpharsphenamine. For a year and a half he received fairly regularly weekly treatments of sulpharsphenamine and the Wassermann reaction remained positive. Owing to irregularity in reporting for the injections, many of the six weeks courses were incomplete. In the history during the first course of treatment, "trouble with his bowels" was noted. Another later report reads "sick and vomits whenever he does *not* get his treatment. An infantile reaction."

From the Harriet Lane Home, Johns Hopkins Hospital and the Department of Pediatrics, Johns Hopkins University (Dr. Bickford) and from the Department of Medicine, Johns Hopkins Hospital (Dr. Tilghman).

1. Loveman, A. B.: Toxic Granulocytopenia, Purpura Haemorrhagica and Aplastic Anemia Following the Arsphenamines, Ann. Int. Med. **5**: 1238 (April) 1932.
2. Farley, D. L.: Depressed Bone Marrow Function from Arsphenamines, Including Type of So-Called Agranulocytosis, Am. J. M. Sc. **179**: 214 (Feb.) 1930.
3. McCarthy, F. P., and Wilson, Robert, Jr.: The Blood Dyscrasias Following the Arsphenamines, J. A. M. A. **99**: 1557 (Nov. 5) 1932.

After the third injection of the seventh course of sulpharsphenamine, a note in the history reads "does not know condition of the child after last treatment."

Following the next treatment, the fourth in the seventh course, a purpuric rash and nose bleeding were recorded. The patient was not brought to the dispensary until eleven days afterward (March 23, 1929). Physical examination at that time showed an enlarged lobulated liver extending 4 cm. below the costal margin, spleen not palpable, several large "black and blue" spots evidently from traumas, and a fading purpuric rash. Laboratory data included a bleeding time of ten minutes, platelets markedly reduced, and a leukocytosis with a relative lymphocytosis, estimated from a blood smear.

From April 9, 1929, until June 16, 1931, over a period of twenty-seven months, the boy received bismuth instead of arsenical compounds as an antisyphilitic therapy. In June, 1931, he was given one dose of neoarsphenamine without any reaction. Between June, 1931, and February, 1932, he did not receive treatments, but on the latter date a regular course of neoarsphenamine was started. The first dose, of 0.15 Gm., did not give a reaction; the second dose, of 0.24 Gm., also was without any untoward reaction. The third dose was increased to the calculated amount for the patient's age, and 0.31 Gm. of neoarsphenamine was given. Immediately on leaving the treatment room after this injection, the child began to vomit. In a few minutes he was cyanotic; the pulse was of poor quality. The child was at once admitted to the hospital. In a word, the appearance and the physical examination were characteristic of those encountered in shock.

Treatment in the ward consisted of morphine and epinephrine, followed by intravenous administration of dextrose. The child responded well, the cyanosis improved and the general condition became better. By evening (nine hours later) the child seemed so well that it was expected he would be discharged the following morning.

Levulose Tolerance Test in Case 1

Fasting	69 mg. per hundred cubic centimeters
½ hour	92 mg. per hundred cubic centimeters
1 hour	110 mg. per hundred cubic centimeters
2 hours	71 mg. per hundred cubic centimeters
3 hours	66 mg. per hundred cubic centimeters

The following morning, however, it was discovered that a purpura had developed during the night. There were ecchymotic discolorations about the site of the intravenous and hypodermic injections. Bleeding was occurring from the nose and gums. There were numerous small petechiae over the pharynx and palate, some over the chest and tibias. A submucous hemorrhage about 2 cm. in diameter was present in the buccal cavity. The liver was palpable 4 cm. below the costal margin. The spleen was not felt. There was no jaundice present. Laboratory examination revealed: red blood cells, 4,700,000; hemoglobin, 86 per cent; white blood cells, 7,800, with a differential count of 63 per cent polymorphonuclears and 32 per cent lymphocytes. No abnormal cells were seen in the stained smear. The platelets were so few that a count by the direct method was worthless; by the indirect method the platelet count was 68,000. Unfortunately, determinations of bleeding and clotting time were not done at this time. The patient was given two small transfusions of 120 cc. of citrated whole blood, after the second of which the bleeding stopped. The urine at no time showed any blood. It contained a trace of albumin on admission but none on subsequent examinations. The stool was faintly positive to the guaiac test on the third day after admission, probably because of swallowed blood from hemorrhages in the mouth. The blood pressure was 98 systolic, 60 diastolic, and the temperature remained normal throughout the entire hospital stay. The number of white blood cells increased from day to day until at the time of discharge the count was 12,500. The differential count remained normal throughout. Even at the time of discharge, five days after the reaction, the blood smear was practically devoid of platelets. A van den Bergh test done on the third day after the illness gave an indirect reaction. Since the question of liver damage was considered, a levulose tolerance test was performed on the third day after the reaction with normal results.

At the time of discharge, on the sixth day, the child appeared well. The petechial spots and hemorrhagic discolorations were still present but were fading. The liver remained 4 cm. below the costal margin, and the tip of the spleen was just palpable.

On examination, three weeks after discharge, the child appeared healthy. The liver edge was at the costal margin, and the tip of the spleen could still be felt. There were no evidences of the purpuric eruption. Laboratory data at this time included a bleeding time of three and one-half minutes; clotting time, three minutes; red blood cells, 4,620,000; hemoglobin, 86 per cent; white blood cells, 9,170, with a normal differential count of 61 per cent polymorphonuclears and 31 per cent lymphocytes. A blood smear was still practically lacking in platelets, only two small clumps of platelets being seen in an entire blood film.

The patient was not given any further antisyphilitic treatment. Examination in November, 1932, seven months after the purpuric reaction, showed that the child was normal except for chronic tonsillitis and a positive Wassermann reaction. No stigmas of congenital syphilis were observed. The child was allowed to continue "on probation."

The child was last seen, Feb. 11, 1933, approximately one year after the reaction to arsenical therapy. Laboratory examination gave normal results. The bleeding time was two and one-half minutes; the clotting time, three minutes (the clot retracted normally). The total white blood cell count was 7,200; the differential count: polymorphonuclears, 45 per cent; lymphocytes, 45 per cent; monocytes, 10 per cent. The smear showed platelets in normal numbers and no abnormalities.

CASE 2.—E. B., a well developed white boy, aged 8 years, was admitted to the hospital, Feb. 5, 1929, with the complaint of bleeding from the gums, easy bruising, and a rash after an illness of two weeks, commencing abruptly following an intravenous injection of 0.375 Gm. of neoarsphenamine.

The mother was infected with syphilis by her first husband seven years before the birth of the patient and she was treated at the time and pronounced cured. Later she divorced the husband and married the man who became the father of the patient. The first pregnancy resulted in an uninfected child. The second pregnancy, by the second husband, resulted in another uninfected child. The third pregnancy resulted in the birth of the patient.

The child had snuffles in infancy and hydrarthrosis at the age of 5 years. At this time both the mother and the child were discovered by their private physician to have positive Wassermann tests. The child was treated by the physician for two years (between the ages of 5 and 7 years) and was given repeated courses of intravenous therapy. Notwithstanding this, he developed a bilateral interstitial keratitis and was brought to this institution, July 24, 1928, in the fourth month of the keratitis. At that time a suggestively positive blood Wassermann reaction was reported but the spinal fluid Wassermann reaction was negative. The first treatment at the Harriet Lane Home was given, July 31, 1928, and the blood Wassermann reaction was reported negative, August 8. There had never been any unfavorable reaction to previous arsenical treatment. The keratitis healed well.

In all, the child had received two full six weeks' courses of neoarsphenamine in the doses of 0.33 Gm. each and at the beginning of the third course the dose was increased to 0.375 Gm. (the patient weighing 56 pounds, or 25 Kg., at the time). About an hour after the third injection in this course he began to bleed freely from the mouth. In a few hours after the treatment he was covered with petechial spots. About thirty-six hours after the injection he bumped himself against a box, a very trivial injury, and a huge effusion of blood into the gluteal muscles occurred. By this time he was covered with small purpuric spots pretty much over the entire body. There were no constitutional symptoms. The bleeding time was eleven minutes, the clotting time seven minutes. A stained blood smear showed a leukopenia with a relative agranulocytosis. No platelets were seen in the smear. On the following day the stools became tarry, but the child had swallowed much blood from the mouth bleeding.

For the few days intervening between these episodes and the time of admission to the hospital, little new was noted. The child did not seem unwell and there was no frank bleeding. The condition remained stationary, with occasional outcropping of petechiae.

On the morning of admission, eleven days after the injection, which seemed to start the bleeding and the beginning of symptoms, the mother took the child to the dental department, where two teeth were extracted. Bleeding followed, and the child was brought immediately to the hospital.

On physical examination the child was not in acute distress. No stigmas of congenital syphilis were discovered. Scattered everywhere over the body, with the sole exception of the scalp and face, there was a petechial eruption (less marked on the back), which did not blanch on pressure. The color of the petechiae varied from a fairly bright red to a dirty brown. There were numerous larger purpuric patches looking quite like bruises scattered here and there over the body, varying in size from 0.5 to 1.5 cm. Two striking purpuric areas were present, one, roughly, 8 by 5 cm. in the left antecubital fossa and the other occupying the greater part of the left buttock. Neither of these patches was tender. The buttock felt firm but evidently was not infected. The mucous membranes of the eyes showed some petechiae. The buccal mucosa was covered with a film of fresh blood and also many small petechiae and larger patches. There was no general glandular enlargement and the epitrochlear lymph nodes were not palpable. The pupils were slightly dilated and reacted sluggishly to light. Except for a refractive error, the eyes were normal. Examination showed the heart and lungs to be normal. There were no masses or tenderness in the abdomen. The liver was felt and percussed about 1.5 cm. below the costal margin on the right and 1 cm. in the midline. The spleen, palpable 2.5 cm. below the costal margin, seemed firm, easily movable and rather elongated. The kidneys were not felt. The joints were freely movable without enlargement, tenderness or increased heat. The reflexes were normal.

Blood Sugar Determinations in Case 2

Fasting	108 mg. per hundred cubic centimeters
½ hour	139 mg. per hundred cubic centimeters
1 hour	127 mg. per hundred cubic centimeters
1½ hours	115 mg. per hundred cubic centimeters
2 hours	110 mg. per hundred cubic centimeters

Laboratory examination at the time of admission disclosed red blood cells, 4,290,000; hemoglobin, 80 per cent, with color index of 1.0; white blood cells, 7,000, with a normal differential count of 67 per cent polymorphonuclears and 31 per cent lymphocytes. The blood smears showed that the red cells stained well without central achromia, anisocytosis or poikilocytosis. The platelets were markedly diminished, the platelet count being 180,000. The bleeding time (filter paper method) was five minutes; the clotting time (capillary tube method), ten minutes (normal, six minutes). Examination of the urine was negative except for a strongly positive urobilin. A tuberculin test of 0.1 mg. was negative.

The patient remained in the hospital for eight days. He was afebrile on admission and remained so during his stay. The oral bleeding stopped within thirty-six hours and did not recommence. Since there were no further purpuric manifestations, transfusion seemed unnecessary. On the sixth day after admission the hemoglobin was still 80 per cent; bleeding time twenty minutes and clotting time ten minutes; platelet count, 150,000. On the day of discharge (the eighth day after admission) the bleeding time was ten minutes.

There has been much discussion as to the possibility of liver damage. The enlargement of the liver and the presence of urobilin in the urine on admission was regarded as suggestive of liver injury. However, it seemed more probable that the urobilin could be attributed to the absorption of the ecchymoses, of which the one on the buttock was very large. A van den Bergh test was not done because of the possibility of extravasation following venipuncture. A test of liver function was performed on the day of discharge. Levulose, 1 Gm. per kilogram, was given by mouth.

The blood sugar determinations showed a normal curve and provided nothing on which to base suspicion of liver damage. Dye tests were not done, because it was feared that any such procedure might cause another purpuric attack.

The child was seen one week after leaving the hospital. He had had no further purpuric manifestations. A blood smear at the time showed some anisocytosis and poikilocytosis, granulocytes that appeared normal, and a normal number of platelets.

No more antisyphilitic treatments were given until two months after the purpuric attack, at which time treatment with a bismuth compound was started, and continued until three full six weeks courses had been given. At the end of that time, treatment was considered complete.

Since October, 1929, until the present time, February, 1933, Wassermann examinations repeated every six months have continued negative. The last examination, Feb. 14, 1933, showed a normal child with no stigmas of congenital syphilis and a negative Wassermann reaction. Laboratory examinations gave normal results. The bleeding time was two minutes; clotting time, three and one-half minutes (test tube method); clot retraction, normal. A differential count showed polymorphonuclears, 53 per cent; eosinophils, 1 per cent; lymphocytes, 41 per cent; monocytes, 5 per cent. Smears contained abundant numbers of platelets; white blood cells, 8,000.

COMMENT

In both of our cases, no familial tendencies to bleeding could be discovered and no hemorrhagic tendencies in the patients themselves had ever been observed. In case 1 the reaction was immediate and severe with the manifestations of circulatory collapse. In case 2 the reaction was more prolonged and more gradual in onset and less severe. In case 1 there had been a previous mild reaction three years earlier, which in retrospect may be taken to indicate a sensitivity to the drug. Patient 2 exhibited nothing to indicate drug or chemical sensitivity. The blood pictures were similar in the two cases and the clinical pictures with petechiae and ecchymoses, involving both skin and mucous membrane, were also similar. In both cases, complete recovery occurred. The treatment of patient 1 was in the main that of shock; e. g., warmth, epinephrine, morphine, intravenous dextrose, and blood transfusions to combat further bleeding. In case 2, treatment was unnecessary and the recovery was entirely spontaneous. Needless to say, arsenicals of any kind are to be avoided in further antisyphilitic treatment of these patients.

The mechanism by which abnormal blood pictures are produced by injections of the arsphenamine derivatives is not clearly understood. Bedson [4] reported that experimentally an extensive, though temporary, reduction in the number of platelets in the circulatory blood did not give rise to purpura and presented evidence to show that the main factors concerned were (*a*) a toxic action on the endothelium of the vessels and (*b*) the removal of the platelets from the circulation.

There are a number of workers who attribute the disturbance in hematopoietic function directly to the toxic effects on the bone marrow of the benzene and arsenic components of the arsphenamines, and the prevailing opinion is that the benzene radical is the more responsible of the two. Jui-Wu-Mu [5] reported an immediate reduction of platelets in from ten to thirty minutes in normal individuals after the first injection of neoarsphenamine, but in none of his patients did a hemorrhagic state develop. Other observers believe that an allergic factor may play a part; their evidence

4. Bedson, S. P.: Blood Platelet Antiserum: Its Specificity and Rôle in the Experimental Production of Purpura, J. Path. & Bact. **25**: 94 (Jan.) 1922.

5. Jui-Wu-Mu: Effects of Neoarsphenamine on the Number of Blood Platelets, Proc. Soc. Exper. Biol. & Med. **26**: 407 (March) 1929.

seems to lie in the fact that in the reported cases the blood dyscrasia has developed only after repeated injections of the arsphenamines. If a "specific sensitivity" phenomenon is involved, it differs from that ordinarily observed in arsphenamine dermatitis in that a gradually cumulative process of "sensitivity" must be postulated. In order to bridge the obvious gaps in the mechanism, Loveman and others assume a "syphilotoxic" factor. One can only raise the question why the phenomenon should occur so rarely in cases of florid syphilis, if a toxic element of the syphilitic infection itself is responsible.

No conclusive evidence seems available at present to decide the etiology of postarsphenamine blood dyscrasias in syphilitic patients. Our purpose here is to add two cases to the literature, so that eventually sufficient data may be studied to aid in the final solution of the problem.

CLINICAL EVALUATION OF THE GALACTOSE TOLERANCE TEST

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Since the introduction by Bauer[1] in 1906 of the galactose test as a method of determining hepatic function, there has been considerable difference of opinion among competent observers as to its practical value. The metabolism of this sugar has been studied intensively, both in this country and abroad, but its application to clinical material received only scanty consideration here until the appearance of the contribution of Shay, Schloss and Bell.[2] These authors have given an excellent review of the literature and have outlined the clinical application of the test. They have pointed out the many advantages of galactose as a test substance: (1) its availability in pure form, with freedom from associated gastro-intestinal upsets following its administration; (2) its prompt assimilation from the alimentary canal unchanged and its conversion into glycogen in the liver; (3) the apparent inability of the remainder of the organism to utilize or store galactose as such, and (4) its lack of a renal threshold characteristic.

As is generally known, clinical application of the test is based on the fact that the normal fasting person, after ingestion of 40 Gm. of galactose, will utilize nearly all of this amount and excrete up to a total of 3 Gm. in the urine in five hours. It has been thought that an output exceeding this arbitrary limit of 3 Gm. (a positive test) indicates diffuse parenchymal hepatic injury such as seen in "intrahepatic" jaundice. In obstructive jaundice it has been felt that the hepatic parenchyma retains its ability to metabolize galactose, and if this is true, excretion of less than 3 Gm. (a negative test) should prevail in the presence of this condition. Basing their argument on these assumptions, Shay and Schloss[3] concluded that the galactose test "is a simple, ready means of identifying a clinically difficult group of cases, namely, the toxic or infectious jaundice group, and of separating it from the obstructive type." This view has recently been restated by Bauer,[4] the originator of the test; in addition, he has expressed the belief that the galactose tolerance test furnishes a more or less direct measurement of the severity of hepatic injury. During the last eighteen months this test has been used at the Mayo Clinic as a routine in various types of jaundice in patients who were hospitalized. This affords an opportunity to evaluate its diagnostic accuracy.

In reporting our results we have selected those cases of obstructive jaundice in which diagnosis has been confirmed by operation, necropsy, or both. Of cases of intrahepatic jaundice we have included only those in which the patients gave definite histories of taking hepatotoxic drugs or in which the clinical picture of epidemic or catarrhal jaundice was present. In addition, the clinical course in these last mentioned cases, as well as follow-up studies for six months, made the clinical diagnosis reasonably certain. Among the patients with metastatic hepatic malignant conditions, three who later died elsewhere are included; in these cases the diagnosis was obvious, as was evidenced by a palpable, nodular liver and rectal implants. A group of persons who were not jaundiced but who had miscellaneous diseases of the biliary tract and liver and who had been subjected to the bromsulphalein test of hepatic function was also investigated by this method. This selected group of cases numbered 127 in all, and our experience with these cases forms the basis of this communication.

The technic of the test followed in this study is essentially identical with that outlined by Shay and Schloss. After an overnight fast the patient empties his bladder, this specimen being saved as a control. He then drinks a solution of 40 Gm. of galactose in 500 cc. of water flavored with a few drops of lemon juice. Thereafter the patient may drink water freely. Specimens of urine from the resting patient are collected hourly during the next five hours, and each is placed in a separate container appropriately labeled. At the conclusion of the five hours, each specimen is tested with the Benedict qualitative reagent for reducing substances. Those samples which give positive tests are mixed, and the total reducing substance is determined by the quantitative method of Benedict. The results are expressed as grams of total reducing substance. The same two trained technicians have performed all the tests. Specimens of urine of diabetic patients have been checked by standard fermentation methods to rule out glycosuria.

INTRAHEPATIC JAUNDICE (TOXIC OR INFECTIOUS)

Acute and Subacute Types.—The eighteen patients who comprise this group (table 1) are of particular interest in view of the difficulty and necessity of accurate differential diagnosis between the condition they represent and painless obstructive jaundice, especially that caused by obstruction of the bile ducts by malignant processes. That age is an unreliable guide to diagnosis is shown by the fact that a third of this

From the Division of Medicine, the Mayo Clinic.

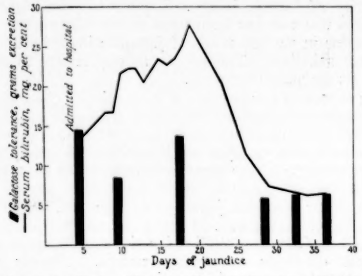
1. Bauer, Richard: Ueber die Assimilation von Galaktose und Milchzucker beim Gesunden und Kranken, Wien. med. Wchnschr. **56**: 20-23, 1906.

2. Shay, Harry; Schloss, E. M., and Bell, M. A.: The Metabolism of Galactose: I. Considerations Underlying the Use of Galactose in Tests of Function of Liver, Arch. Int. Med. **47**: 391-402 (March) 1931.

3. Shay, Harry, and Schloss, Eugene: Painless Jaundice: Its Differential Diagnosis by Galactose Tolerance Test, J. A. M. A. **98**: 1433-1436 (April 23) 1932.

4. Bauer, Richard: Unsere Kenntnisse über Leberfunktion und ihre Verwertung für die Klinik, Wien. klin. Wchnschr. **45**: 1577-1581 (Dec. 23) 1932.

group of patients were more than 50 years of age. With the exception of only three cases, excretion of galactose on at least one occasion during the period of hospitalization was 3 Gm. or more. In some of these cases repeated determinations were made and interesting variations in galactose tolerance were observed, as shown in the chart. Shay and his co-workers have



Variations in galactose tolerance and value for serum bilirubin in a case of intrahepatic jaundice.

also noted a rise and fall in total galactose output, corresponding apparently to progression and recession of the disease. During the early stages of certain mild cases a negative test may be present, and on repetition the excretion of reducing substances may never rise above the arbitrary upper normal limit of 3 Gm.

Case 18 (table 1), in which there was jaundice of three months' duration following sulpharsphenamine, obviously must be included in this group as an example of subacute hepatic parenchymal injury. Excretion of galactose of 1.3 Gm. is a reflection of extensive hepatic regeneration during that period, as evidenced also by the marked decline to normal limits in value for serum bilirubin while the patient was under observation.

It is clear from examination of table 1 that in acute and subacute intrahepatic jaundice the test, although usually reliable, is not infallible. However, its value as additional evidence when correlated with the usual clinical and laboratory observations is exemplified by case 10, in which a diagnosis of obstructive jaundice had been made. Operation was postponed when the galactose tolerance test was reported as positive, with excretion of 6.36 Gm. of reducing substances in the urine. The jaundice subsided gradually thereafter, the patient's general condition improved, and on reexamination six months later he was found to be in excellent health.

Chronic Types.—In contrast to the preceding series, the patients now to be considered, who for the most part had various types of portal and biliary cirrhosis, had consistently normal galactose tolerance, with excretion usually between 2 and 3 Gm. (table 2). From the histories and physical examinations it is apparent that the underlying processes of hepatic destruction and repair had been active for many months before jaundice actually supervened, and the presence of newly regenerated hepatic tissue may thus explain the normal utilization of galactose by these patients. It is noteworthy that in two instances (cases 20 and 22) increased excretion of galactose fell to normal values as the patients recovered from brief episodes of jaundice. Transient increases of bilirubinemia in this type of case obviously suggest an acute process superimposed on the more chronic one. Our observations in this group agree in a general way with those recently published by Bauer.

OBSTRUCTIVE JAUNDICE

Carcinoma of Pancreas and Bile Ducts; Metastatic Carcinoma of Liver.—Of twenty proved cases of carcinoma of the head of the pancreas or ampulla of Vater, with jaundice ranging in duration from three days to six months, there were nine in which galactose tests were positive (table 3). There was no constant relationship between the duration and depth of the jaundice and the amount of galactose excreted, nor could the test be regarded as of great prognostic significance. It is a remarkable fact that in case 55 as the patient approached the stage of terminal hepatic insufficiency, with increased drowsiness, purpura, and rising values for serum bilirubin and blood urea, the tolerance for galactose improved, so that the successive tests disclosed decrease in excretion of galactose from 4.60 to 2.18 Gm.

In the ten cases of primary neoplasm of the common or hepatic ducts (table 3), the jaundice was fairly acute, averaging two weeks in duration. Five patients in this group gave positive tests on at least one occasion. Again, no prognostic significance could be attached to the results of the test. Patients 40 and 48, who presented positive galactose tests, died from postoperative hepatic insufficiency, as did patients 41 and 47, who had previously had normal tolerance for galactose.

TABLE 1.—*Acute and Subacute Intrahepatic Jaundice*

Case	Age, Years	Sex*	Etiology	Duration of Jaundice	Serum Bilirubin†	Galactose Tolerance‡
1	45	♂	Cinchophen	4 days	27.8 to 5.6	14.50
						8.34
						13.47
						4.75
						4.70
2	61	♂	Cinchophen	8 days	17.8 to 3.8	3.00
3	64	♂	Cinchophen	12 days	27.0 to 6.0	0
						5.10
						5.00
						2.15
4	61	♀	Cinchophen	14 days	50.0 to 3.1	1.20
						2.04
						3.03
						2.86
						4.21
						2.77
5	30	♀	Cinchophen	30 days	7.1 to 4.5	3.45
6	31	♀	Epidemic (catarrhal)	7 days	5.5 to 2.5	1.59
7	46	♂	Epidemic (catarrhal)	10 days	7.9 to 2.4	3.05
8	56	♂	Unknown	5 days	6.3 to 2.4	1.86
9	52	♂	Unknown	3 weeks	10.7 to 4.0	4.53
						2.89
10	60	♂	Unknown	3 weeks	12.1 to 5.7	6.36
11	36	♂	Unknown	3 weeks	18.5 to 3.3	4.09
						4.73
12	29	♀	Unknown	6 weeks	15.0 to 3.3	4.99
						2.21
13	42	♂	Unknown	6 weeks	25.0 to 3.6	5.40
						6.61
						2.88
14	33	♂	Unknown	9 weeks	25.0 to 12.5	3.76
15	20	♂	Unknown	4 months	3.57 to 3.06	3.00
16	32	♂	Arsphenamine	2 weeks	18.8 to 7.9	3.16
						2.07
17	38	♂	Arsphenamine	4 weeks	2.3 to 1.0	3.39
18	33	♂	Sulpharsphenamine	3 months	19.0 to 1.0	1.30
						0

* In the tables, ♂ denotes male; ♀, female.
† Range during period of hospitalization; milligrams in each 100 cc.
‡ Grams excreted in urine in five hours.

We have included with our cases of obstructive jaundice resulting from a malignant condition a group of seven patients with metastatic malignant deposits in the liver. It is appreciated that under these conditions jaundice may not necessarily be obstructive; however, the not infrequent absence of jaundice in advanced

carcinomatosis of the liver as seen at necropsy suggests that the usual mechanism of jaundice under these conditions is a blocking of intrahepatic or external biliary ducts by metastatic nodules or involved lymph nodes. Three of these seven patients excreted galactose in excess of 3 Gm. This is contrary to Bauer's experience; he has recently stated that a metastatic malignant condition of the liver rarely produces any significant change in galactose tolerance. This statement probably applied to nonjaundiced patients with such a condition, but in cases of proved metastatic malignancy and jaundice positive galactose tests are not uncommon in our experience.

In a total, therefore, of thirty-seven proved cases of jaundice secondary to malignant disease, obstructing the bile passages or metastasizing to the liver, or both, positive galactose tests were obtained in seventeen (46 per cent).

Choledocholithiasis; Cholecystitis with Stones and Associated Hepatic Lesions; Stricture of the Common or Hepatic Ducts.—There were twenty-two cases of obstructive jaundice caused by stone in the common bile duct (table 4). In each case, notes made at operation or necropsy, concerning the color of the bile and the appearance and condition of the liver, were available. In six cases in which jaundice was present from ten days to many months, excretion of galactose exceeded 3 Gm. No apparent correlation existed between the degree of hepatic injury noted by the surgeon and the total excretion of galactose, nor could one prophesy from the results of the tests either the type of postoperative convalescence or the probability of fatal outcome. Thus, three patients (64, 67 and 71) with negative tests had definite postoperative hepatic insufficiency, and one died; of the six patients with positive tests, only one failed to survive operation. Postoperative hemorrhage occurred with approximately equal frequency in cases with positive and in cases with negative tests.

There were five cases of cholecystitis with stones in which calculous material could not be demonstrated in the common or hepatic ducts at operation (table 4), although the patients were jaundiced at the time. All of these patients were found, however, to have serious degrees of hepatitis or cholangeitis. In three cases, excretion of galactose was normal; of the two patients who presented positive tests, one (85) was described as having an atrophic and cirrhotic liver and the other (87) was found to have a maximal degree of hepatitis and cholangeitis. The former patient made a good recovery after operation, but the latter died with symptoms of hepatic insufficiency and hemorrhage. The three patients with negative galactose tests had uneventful convalescence, in spite of the undoubted presence of hepatic cellular injury.

In cases of stricture of the common or hepatic ducts, the antecedent history of chronic disease of the biliary tract, and the tendency of the biliary obstruction to be of long standing, persistent, and practically complete, would predicate the existence of a more advanced form of parenchymal hepatic injury than that which usually follows other types of mechanical occlusion of the bile passages. In eleven cases in which plastic repair for stricture of the common or hepatic ducts was carried out (table 4), moderate to extreme degrees of biliary cirrhosis and cholangeitis were actually present, in all, at operation or necropsy. Four of these eleven patients gave positive galactose tests. Two of the four patients had uneventful convalescence, whereas the remaining two failed to survive.

It is noteworthy that both in cases 93 and 94, despite negative galactose tolerance tests, "white bile" was found at operation. The postoperative course was characterized by signs of hepatic insufficiency in both cases and by marked hemorrhagic tendency in one.

A remarkable example of residual obstructive biliary cirrhosis secondary to stricture of the common bile duct was observed in one case (99). A strongly positive galactose test (15 Gm. excreted in five hours) was obtained shortly before death. At necropsy the terminal picture of hepatic insufficiency was presented with jaundice, ascites, and gastro-intestinal hemorrhage.

TABLE 2.—*Chronic Intrahepatic Jaundice*

Case	Age, Years	Sex	Diagnosis	Duration of Jaundice	Serum Bilirubin*	Galactose Tolerance†	Comment
19	49	♂	Cirrhosis with ascites and jaundice	1 week	6.3 to 10.7	2.85	Marked alcoholism; ascites for three months prior to admission; rising serum bilirubin curve
20	35	♂	Alcoholic cirrhosis with jaundice	1 week	5.6 to 1.5	3.12 4.84 2.98	Extreme alcoholism; liver greatly enlarged; fluctuating serum bilirubin curve
21	35	♂	Splenohepatic disease, Banti's syndrome (?)	10 days	12.5 to 1.6	2.01	Marked alcoholism; fluctuating serum bilirubin curve; splenectomy; liver moderately enlarged and cirrhotic; surface diffusely nodular
22	51	♂	Cirrhosis with ascites and jaundice	2 weeks	16.7 to 4.8	3.10 1.80	Marked ascites for one month prior to admission; falling serum bilirubin curve
23	45	♂	Cirrhosis with ascites and jaundice	2 months	5.4 to 2.9	2.37	Marked alcoholism; enlarged liver and spleen; ascites
24	24	♂	Biliary cirrhosis with splenomegaly	3 months	8.3 to 7.1	2.27	Moderate ascites and collateral circulation; report of death two months later
25	60	♂	Cirrhosis with ascites and jaundice	6 months	5.35 to 3.3	2.85	Ascites six months prior to admission
26	16	♂	Portal cirrhosis	6 months	3.6 to 2.4	2.00	Blood, including fragility of erythrocytes, normal
27	26	♂	Biliary cirrhosis with splenomegaly	8½ months	7.1 to 6.5	2.18	Markedly enlarged liver and spleen
28	51	♀	Cirrhosis with ascites and jaundice	9 months	3.9 to 10.0	2.74	Ascites two months prior to admission; fluctuating serum bilirubin curve; Talma-Morison operation done
29	45	♀	Infectious biliary cirrhosis	14 months	4.3 to 5.8	2.52	Operation at onset of jaundice; diagnosis made and T tube inserted in common bile duct
30	54	♂	Cirrhosis with ascites and jaundice	16 months	8.8 to 6.3	2.00	
31	51	♀	Biliary cirrhosis with splenomegaly	24 months	6.8 to 6.0	2.80	Hepatic biopsy seven years previously, at operation for chronic cholecystitis, disclosed biliary cirrhosis

* Range during period of hospitalization; milligrams in each 100 cc.
† Grams excreted in urine in five hours.

Extensive cirrhotic changes were noted in the liver, with nodular hyperplasia and a marked degree of fibrosis; the pathologic picture, in fact, closely resembled that of advanced alcoholic cirrhosis.

Our experience with the galactose test in the thirty-eight cases (table 4) of jaundice due to choledocholithiasis, stricture, and cholecystitis with hepatitis and cholangeitis may be summarized by the statement that positive tests were obtained in a third of the cases. This percentage is not significantly altered by excluding the five cases of cholecystitis, cholelithiasis and hepatitis, in which the common bile duct was patent at the time of operation.

TABLE 3.—*Carcinoma of Ampulla of Vater, Head of Pancreas and Common or Hepatic Ducts*

Case	Age, Yrs.	Sex	Situation*	Duration of Jaundice	Serum Bilirubin†	Galactose Tolerance‡
32	77	♂	Head of pancreas	3 days	10.0 to 18.9	2.06
33	51	♂	Hepatic ducts	Few days	6.5 to 10.0	2.55
34	75	♂	Common bile duct	4 days	4.1 to 15.0	4.46
						3.82
35	56	♀	Common bile duct	1 week	2.7	0
36	60	♂	Head of pancreas	1 week	11.0 to 16.0	3.43
						5.23
37	57	♂	Head of pancreas	1 week	7.9 to 23.4	1.70
38	68	♂	Common bile duct	10 days	20.8 to 5.2	3.20
						2.80
39	65	♀	Hepatic ducts	2 weeks	8.8 to 7.5	2.99
40	66	♀	Common bile duct	2 weeks	25.9 to 30.0	5.64
41	67	♂	Common bile duct	2 weeks	30.0 to 13.6	2.77
42	63	♂	Head of pancreas	2 weeks	10.3 to 21.4	0
43	60	♂	Head of pancreas	2 weeks	13.6 to 15.0	3.33
44	69	♂	Head of pancreas	2 weeks	10.0 to 25.0	2.50
45	67	♂	Ampulla of Vater	2 weeks	8.3 to 25.0	4.21
46	65	♂	Ampulla of Vater	3 weeks	5.4 to 25.0	3.00
§					16.7 to 30.0	7.60
						3.47
47	64	♂	Hepatic duct	3 weeks	26.8 to 16.7	1.68
						2.80
						1.56
48	68	♂	Hepatic duct	4 weeks	21.4 to 16.7	3.20
49	67	♂	Head of pancreas	4 weeks	25.0 to 27.0	1.09
50	50	♂	Head of pancreas	4 weeks	8.8 to 25.0	5.76
51	56	♂	Head of pancreas	4 weeks	16.7 to 25.0	3.77
52	54	♂	Head of pancreas	5 weeks	8.8 to 13.6	2.47
53	59	♂	Head of pancreas	6 weeks	12.5 to 21.4	2.90
54	57	♂	Head of pancreas	6 weeks	18.8 to 30.0	4.60
55	48	♂	Head of pancreas	6 weeks	30.0 to 50.0	4.60
						3.20
						2.18
56	39	♂	Head of pancreas	2 months	15.0	4.25
57	65	♂	Common bile duct	2 months	5.6	4.27
58	72	♂	Head of pancreas	10 weeks	2.1 to 5.8	2.40
59	63	♂	Head of pancreas	3 months	2.0 to 8.8	1.67
60	48	♂	Ampulla of Vater	5 months	8.5 to 11.5	0.65
61	48	♀	Head of pancreas	6 months	7.5 to 12.5	1.30

* Based on operation, necropsy, or both.
† Range (in milligrams in each 100 cc.) during period of hospitalization.
‡ Grams excreted in urine in five hours.
§ Two admissions at interval of one year.

PATIENTS WITHOUT JAUNDICE

Our experience with the test on normal control subjects coincides with the results of numerous investigators and confirms the upper limit of excretion of galactose under the conditions of the test as 3 Gm. Numerous tables appear in the literature, rendering inclusion of our own data on this point unnecessary. The contention of Rowe [5] that galactose tolerance, as determined by his own experimental technic, varies with sex apparently does not affect the uniform clinical application of the test to jaundiced patients of both sexes.

In a miscellaneous group of twenty-one cases of disease of the biliary tract and liver, the results of the galactose test were compared with the bromsulphalein test of hepatic function. Not one of these patients was jaundiced at the time either test was performed. The dye test gave positive results in fifteen cases, but in only two cases was the galactose test positive and in these the deviation from normal was slight. In several cases of this group, extensive hepatic lesions were noted at operation or at necropsy, and in these the bromsulphalein test was uniformly positive, although excretion of galactose was within normal limits. In one case the hepatic substance was almost entirely replaced by a bile duct type of primary hepatic carcinoma; retention of dye was graded 4, whereas excretion of galactose was normal, 1.62 Gm. It is apparent from these cases that a determination of galactose tolerance may be of little, if any, clinical value in hepatic disease not associated with jaundice.

COMMENT

In considering the applicability of the galactose test to clinical material, it is worth while to review some of the more recent experimental evidence on the subject. Bollman, Power and Mann [6] have shown that only 80 per cent of galactose may be recovered from the urine of the hepatectomized animal after intravenous injection. Also, if the equivalent dosage of this sugar is given orally to hepatectomized dogs, there is somewhat greater loss, which may be due to oxidation in the muscular tissues of the animal. This phenomenon may be explained on the basis of relatively slow absorption of galactose from the digestive tract. These workers also showed that there were marked variations in the absorption and excretion of galactose in normal dogs and in those with experimental cirrhosis. They concluded, however, that galactose is theoretically the sugar of choice for the testing of carbohydrate metabolism in hepatic disease.

Certain inherent pitfalls in conducting the clinical tests make a rigorous technic necessary. Vomiting and diarrhea are obvious causes of faulty absorption, but gastric stasis, whether functional from reflex causes, or mechanical, as in malignant conditions of the upper part of the digestive tract, is a less obvious cause of malabsorption. In aspiration of gastric content performed at the end of the five-hour period it was by no means rare to recover considerable amounts of the test sugar, thus invalidating to some extent the test in question. The delay in absorption secondary to the retarded circulation present in certain types of chronic hepatic disease may also be of some significance. In addition to defective absorption, faulty excretion of the sugar due to renal and vesical factors may introduce appreciable errors. Oliguria, whether caused by dehydration or by acute renal injury associated with the primary hepatic disease, will result in an unreliably low output of galactose. Functional retention of urine in the bladder, and residual urine in the presence of a hypertrophied prostate gland may also mask a positive test.

Various metabolic factors, at present still controversial and confusing, may serve in a nonspecific way to vitiate the test. Particularly in dehydration and starvation, as well as in febrile conditions, the results should be interpreted with caution. Standards of normal presuppose an adequate carbohydrate reserve. The studies of Shay, Schloss and Bell and of Roe and Schwartzman [7] tend to indicate that excretion of galactose in the urine of diabetic patients is comparable with that of normal persons; however, the latter investigators noted in dealing with diabetic patients an average increase

5. Rowe, A. W.: Sugar Tolerance as an Aid to Diagnosis, J. A. M. A. **89**: 1403-1407 (Oct. 22) 1927.

6. Bollman, J. L.; Power, M. H., and Mann, F. C.: The Relation of the Liver to the Metabolism of Galactose, Proc. Staff Meet., Mayo Clin. **6**: 724-725 (Dec. 9) 1931.

7. Roe, J. H., and Schwartzman, A. S.: Galactose Tolerance of Normal and Diabetic Subjects, and Effect of Insulin upon Galactose Metabolism, J. Biol. Chem. **96**: 717-735 (June) 1932.

in fermentable (dextrose) blood sugar of 40 mg. in each 100 cc. during the period of the test. In view of the general law known as "summation of effects of glycosuric tendencies," it is advisable to perform fermentation tests on the urine of all patients with frank diabetes or with diabetic dextrose tolerance curves, regardless of whether the fasting subject has glycosuria or not. Readings of the fasting blood sugar and dextrose tolerance tests may also be indicated in exceptional cases. Because of their tendency to alimentary glycosuria or actual diabetes, patients with thyrotoxic states may well be included in the group of cases in which galactose tests are to be interpreted with particular care.

TABLE 4.—*Nonmalignant Obstructive Jaundice*

Case	Age, Years	Sex	Diagnosis*	Duration of Jaundice	Serum Bilirubin†	Galactose Tolerance‡	Comment
62	57	♀	Stone in common bile duct; hepatitis, cholangeitis; pancreatitis	4 days	10.7 to 7.1	1.07	Stormy postoperative convalescence
63	55	♀	Stone in common bile duct; hepatitis, graded 4	10 days	13.6 to 10.5	3.10	White bile noted at operation
64	43	♂	Stone in common bile duct; hepatitis, graded 4	10 days	21.4 to 2.7	0	Postoperative hepatic insufficiency; stormy convalescence
65	40	♀	Stone in common bile duct; suppurative cholangeitis	2 weeks	15.0 to 3.0	4.70	Good postoperative convalescence
66	68	♂	Stone in common bile duct; chronic hepatitis, graded 4; chronic pancreatitis, graded 4	3 weeks	3.0 to 2.6	5.12	Fifteen year history of biliary colic; good postoperative convalescence
67	61	♂	Stone in common bile duct; hepatitis, graded 3	3 weeks	11.5 to 7.95	2.72	Died of hepatic insufficiency postoperatively, with hemorrhagic tendency
68	49	♀	Stone in common bile duct; suppurative cholangeitis	3 weeks	11.5 to 18.5	2.82	Fifteen year history of biliary colic and jaundice; good postoperative convalescence
69	47	♀	Stone in common bile duct; purulent cholangeitis	3 weeks	10.7 to 3.2	2.09	Marked cholangeitis; good postoperative convalescence
70	46	♀	Stone in common bile duct.....	2 months	18.8 to 41.8	0	No operation; died of hepatic insufficiency with marked hemorrhagic features
71	46	♀	Stone in common bile duct; hepatitis, graded 3; purulent cholangeitis	2 months	9.4 to 1.8	0	White bile noted at operation; postoperative hepatic insufficiency; stormy convalescence
72	47	♂	Stone in common bile duct.....	2 months	3.8 to 1.3	2.90	Good postoperative convalescence
73	52	♀	Stone in common bile duct; atrophic biliary cirrhosis, graded 3	9 weeks	16.7 to 5.6	0	Purpuric tendencies before operation; good postoperative convalescence
74	49	♀	Stone in common bile duct; suppurative cholangeitis	3 months	15.0 to 11.5	2.43	Good postoperative convalescence
75	65	♂	Stone in common bile duct; subhepatic abscess	3 months	2.0 to 1.6	1.32	Good postoperative convalescence
76	53	♀	Stone in common bile duct; biliary cirrhosis, graded 2	3 months	8.3 to 1.8	1.00	Good postoperative convalescence
77	56	♂	Stone in common bile duct; biliary cirrhosis, graded 3	4 months	11.5 to 3.4	3.20	Good postoperative convalescence
78	52	♂	Stone in common bile duct; biliary cirrhosis, graded 2	5 months	5.6 to 3.1	2.34	Good postoperative convalescence
79	62	♀	Stone in common bile duct; cholangeitis	6 months	18.8 to 5.2	3.20	Died of hepatic insufficiency and postoperative hemorrhage
80	53	♂	Stone in common bile duct; carcinoma of gallbladder	6 months	16.7 to 15.6	0	No operation; died of hepatic insufficiency
81	65	♀	Stone in common bile duct; cirrhosis, graded 3	9 months	11.5 to 9.4	0.66	Good postoperative convalescence
82	67	♂	Stone in common bile duct.....	Several years, intermittently	2.5 to 1.5	4.08	Good postoperative convalescence
83	52	♀	Stone in common bile duct; biliary cirrhosis, graded 2	Several years, intermittently	4.7 to 3.8	1.93	Good postoperative convalescence
84	42	♂	Cholecystitis with stones; hepatitis, graded 2	7 days	3.7 to 1.7	2.49	Good postoperative convalescence
85	66	♂	Cholecystitis with stones; atrophic biliary cirrhosis	7 days	16.7 to 4.3	3.40	Good postoperative convalescence
86	58	♀	Cholecystitis with stones; hepatitis, graded 3; pancreatitis, graded 4	4 weeks	4.0 to 2.0	2.03	Good postoperative convalescence
87	49	♂	Cholecystitis with stones; hepatitis, graded 4; pancreatitis, graded 4	5 weeks	21.4 to 30.0	3.55	Died of hepatic insufficiency and multiple hemorrhages
88	76	♂	Cholecystitis with stones; biliary cirrhosis, graded 4; cholangeitis	3 months	3.3 to 2.5	2.09	Good postoperative convalescence
89	54	♂	Stricture of common bile duct.....	2 days	2.17 to 2.01	1.89	Good recovery
90	51	♀	Stricture of common bile duct; biliary cirrhosis, graded 2	3 weeks	3.3 to 2.6	2.50	Good recovery
91	50	♀	Stricture of common bile duct; biliary cirrhosis, graded 3	2 months	13.2 to 1.2	3.48	Mild diabetic history; on routine urinalysis always sugar free; good recovery
92	66	♀	Stricture of common bile duct.....	2 months	12.5 to 7.5	1.89	Good recovery
93	43	♀	Complete division of common bile duct	4 months	10.7 to 9.7	0	White bile noted at operation; stormy convalescence
94	44	♀	Stricture of common bile duct.....	4 months	10.7 to 16.7	1.60 0	White bile noted at operation; stormy convalescence; hepatic insufficiency and hemorrhage
95	61	♂	Stricture of common bile duct; biliary cirrhosis, graded 2; cholangeitis	1 year	4.41 to 4.16	1.61	Repeated plastic operations on common bile duct; good recovery
96	38	♀	Stricture of common bile duct and hepatic ducts	1½ years	8.8 to 6.0	3.65	Died few hours postoperatively
97	41	♀	Stricture of common bile duct.....	2 years	4.28 to 1.5	3.24	Repeated plastic operations on common bile duct in last two years; good recovery
98	48	♂	Stricture of common bile duct; biliary cirrhosis	2 years	21.4 to 4.7	2.71	Died of hemorrhage postoperatively
99	36	♀	Stricture of common bile duct; biliary cirrhosis; cholangeitis	10 years intermittently	7.5 to 7.7	15.1	Died of hepatic insufficiency and hemorrhages

* Based on operation, necropsy, or both; grading, where noted, based on 1 to 4
† Range during period of hospitalization, milligrams in each 100 cc.
‡ Grams excreted in urine in five hours.

In a considerable number of the cases studied, intravenous injections of a 10 per cent solution of dextrose were given daily as a preparation for surgical treatment. The question has been raised as to whether one or many such injections would vitiate a galactose tolerance test done on a subsequent day. It has been repeatedly noted

(Allen [8] and Folin and Berglund [9]) that the utilization of any sugar is modified when another assimilable sugar is given simultaneously by the same or a different route. This objection does not hold in this instance, however, since the injections of dextrose were completed at least twenty hours before the galactose was administered. On hypothetic grounds it would seem that previous, or even simultaneous, administration of dextrose should increase the hepatic glycogen and improve hepatic function, thus serving to reduce the excretion of galactose. The experiments of Blöch and Weisz [10] appear to substantiate this view, and those of Corley [11] are not contradictory. In experimental animals with obstructive jaundice, Millet [12] also has shown that repeated preliminary injections of dextrose may increase the galactose tolerance rather than decrease it. On this basis it would seem that a previous injection of dextrose, such as many of our patients received, would at least not tend to increase the number of positive tests but, if anything, would reduce their number.

The value of a test of hepatic function to both internist and surgeon is directly proportional to its accuracy in establishing or supporting a clinical diagnosis; in indicating, in medical cases, improvement or lack of it; in determining in cases under consideration for operation the degree of risk, and in predicting probable postoperative complication. Judged by these exacting standards, the merits of the galactose test may be questioned; indeed, it is doubtful whether any single test will ever fulfil these requirements.

In cases of acute intrahepatic jaundice of average severity, a positive galactose test is almost the rule. A negative test may occur in the presence of nonobstructive jaundice either in mild or convalescent cases, or in cases of long standing, and does not necessarily militate against the diagnosis. However, positive tests occur with considerable frequency in the presence of obstructive jaundice of various types (from 32 to 46 per cent of all types in this series). As will be noted from the tables, most of these positive tests involve excretion of galactose of from 3 to 4 Gm. A more strongly positive test (excretion of 6 Gm. or more of reducing substance) is more likely to indicate an intrahepatic type of jaundice and should be a serious deterrent against immediate surgical intervention. Either the condition is entirely intrahepatic, that is, not surgical, or preoperative treatment should be instituted to reduce the risk incidental to possible associated parenchymal hepatic injury.

In following the clinical course of patients with intrahepatic jaundice, the test undoubtedly has some definite prognostic value, especially when the value for serum bilirubin has become "fixed" and varies but little from day to day. Millet's studies on galactose tolerance of animals with experimental hepatic injury produced with carbon tetrachloride, diaminotoluene, or tetrachloroethane are in agreement with the foregoing observations. In his experience, acute, severe hepatic injury usually produces increased excretion of galactose; milder degrees of injury produce no appreciable change; in the presence of chronic hepatic injury, the response to administration of galactose is variable. The presence of active hepatic regeneration apparently leads to negative tests, both under experimental conditions and in clinical cases even though the preceding hepatic injury has been extensive.

As we have stated, in the presence of obstructive jaundice, tests were positive in our series in from 46 (malignant) to 32 per cent (benign) of the cases. The tendency for the obstruction in cases of malignancy to be complete and persistent probably accounts for the higher percentage of positive tests in the malignant group, but the part played by biliary infection and biliary cirrhosis in cases of stone and stricture is probably not inconsiderable in affecting the excretion of galactose. The reasons for these deviations are apparent from pathologic studies. Counseller and McIndoe [13] have demonstrated the marked degree of hydrohepatosis, infection of the larger bile passages and biliary parietal sacculi, and of injury to the hepatic parenchyma secondary to biliary obstruction or to interference with portal circulation. In nine of the nineteen cases of obstructive jaundice which came to necropsy the galactose test was positive, and there was apparently a sufficient amount of hepatic injury to explain the results. In the other cases, less extensive parenchymal injury was noted.

It is recognized that not infrequently in the liver a condition of degenerative change or actual atrophy may develop following obstruction to the outflow of bile; in such cases the galactose test would seem fully as likely to give a positive result as in pure types of intrahepatic jaundice. In other cases of obstruction the processes of regeneration and repair may follow closely in the wake of hepatic cellular destruction, and a negative galactose test may belie the extent of hepatic disorganization. In short, there are definite anatomic reasons why a galactose test may be misleading in the presence of obstructive jaundice, and it is no serious criticism of the test to say that its range of error in this condition may be considerable.

From a physiologic standpoint, studies on the character and composition of bile following surgical relief of biliary obstruction of long standing [14] further illustrate the functional inadequacy of the liver which may follow occlusions of the bile passages. As Millet has shown in the experimental animal, the excretion of galactose following ligation of the common bile duct varies considerably in different animals and in the same animal at different times. The individual tolerance to biliary obstruction varies widely both in the experimental and in the human subject, and the amount of hepatic parenchymal injury secondary to obstruction may likewise be extremely variable. No doubt these variations explain, to some extent at least, the inconstant results of galactose tolerance tests. As with all other functional studies applied to the liver, perfection is hardly to be expected; clinical data furnish a basis for diagnosis, laboratory data being chiefly of corroborative value. The galactose test may be of great assistance in deciding matters of diagnosis and treatment in certain cases, but in our opinion the possibility of considerable margin of error should be considered in the interpretation and clinical application of the test in

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every case, particularly if clinical data and the result of the test do not agree.

CONCLUSIONS

We feel that the galactose test does not uniformly distinguish between obstructive and toxic or infectious types of jaundice, although it may furnish valuable corroborative data in doubtful cases. In both intrahepatic and obstructive types of jaundice, strongly positive tests (excretion of 6 Gm. or more) should be seriously regarded and, if excretion is consistently high, are probably indicative of serious injury to the hepatic structure. The borderline group of positive tests, with excretion of only slightly more than 3 Gm. of reducing substance, should not be regarded as conclusive evidence against the presence of mechanical biliary obstruction. The value of the test to the individual practitioner will depend on how carefully its results are weighed against time-honored clinical data and previous clinical experience with jaundiced patients.

WEAKNESS AND FAILURE OF THE LEFT VENTRICLE WITHOUT FAILURE OF THE RIGHT VENTRICLE

CLINICAL RECOGNITION

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BOSTON

In the practice of medicine today, no more important condition is encountered or so often unrecognized as such as is weakness or congestive failure of the left ventricle without congestive failure of the right ventricle. I propose herewith to discuss as a definite clinical syndrome or entity features of left ventricular failure in man which permit its recognition and which demand appropriate treatment.

My interest in this condition has been aroused in the past ten years by the observation of frequent instances of congestive heart failure, by special studies of my own,[1] by the writings of certain others, and by the astonishing fact that so little attention has been paid by the English speaking world either in practice or in writing to this state of congestive failure of the left ventricle without congestive failure of the right ventricle. There has been this neglect not only by the medical profession at large but also by many cardiologists and even by some of the leaders. Realization of the truth has been slowly penetrating my own mind, largely as the result of the study of three conditions that have interested me because of their relative neglect in English literature. These conditions are (1) cardiac asthma,[1a] (2) protodiastolic gallop rhythm[1c] and (3) pulsus alternans.[1b] To complete the clinical evidence of left ventricular weakness and failure that is available today, one should add to the three features named four others which are also very important in the presence of heart strain (in particular, hypertension, coronary thrombosis, and aortic valvular disease) limited to the left ventricle. These four features are: (4) cardiac dyspnea without engorgement of the systemic veins, (5) diminished vital capacity without extracardiac cause, (6) increase in the roentgen shadows of the lung hilus blood vessels, and (7) increasing accentuation of the pulmonary second sound. The four conditions just mentioned are also found with mitral stenosis, and of course that lesion must be ruled out before these conditions in any given case can be considered as clear evidence of left ventricular failure.

Read before the Association of American Physicians, Washington, D. C., May 9, 1933.

1. (*a*) Palmer, R. S., and White, P. D.: The Clinical Significance of Cardiac Asthma: Review of Two Hundred and Fifty Cases, J. A. M. A. **92**: 431 (Feb. 9) 1929. (*b*) White, P. D.: Alternation of the Pulse: A Common Clinical Condition, Am. J. M. Sc. **150**: 82, 1915; (*c*) The Clinical Significance of Gallop Rhythm, Arch. Int. Med. **41**: 1 (Jan.) 1928.

THE LITERATURE

The history of the study of left ventricular failure is a fascinating one. I have traced the concept back more than 100 years.

In the earliest books on the heart itself, beginning two centuries ago, there gradually grew up over a period of 100 years the definite conception of enlargement of the heart from strain of some sort. In 1728, Lancisi [2] wrote on aneurysm or enlargement both of the heart and of the arteries. Incidentally, he described a new sign; namely, engorgement and pulsation in the cervical veins due to transmission of pressure upward from a dilated right heart.

DeSenac,[3] in 1749, wrote of cases of cardiac enlargement with and without valvular disease and related asthma to some kinds of heart disease; he described among others a case of aortic stenosis with cardiac asthma and secondary dilatation of the right heart. Morgagni,[4] in 1760, continued the discussion of heart strain and resulting enlargement and cited several cases. In 1806, Corvisart [5] discussed active and passive aneurysm of the heart, signifying hypertrophy and dilatation as active aneurysm and dilatation alone as passive aneurysm. Bertin,[6] in 1811, introduced the terms concentric hypertrophy and excentric hypertrophy to denote simple hypertrophy of a ventricle and hypertrophy with dilatation, respectively. But it was Hope [7] of Edinburgh and London who, so far as I have been able to find out, was the first clearly to point out that the left ventricle may weaken under some strain with resulting congestion of the lungs and secondary strain thereafter on the right ventricle. Hope also was the first clearly to describe cardiac asthma. His writings in 1832 are so vivid and so much to the point on these important conditions that I shall quote briefly from them now:

> As an obstacle to the circulation operates on the heart in a retrograde direction, the cavity situated immediately behind it is the first to suffer from its influence. Accordingly, all the impediments seated in the aorta, its mouth, or the arterial system, act primarily on the left ventricle, which, being likewise exposed to the heaviest burden when the circulation is accelerated, has to conflict against a greater variety of exciting causes of hypertrophy, than any other cavity of the heart. On this account, therefore, as well as from the thickness of its parieties, it is subject to hypertrophy in a greater degree than any other.
>
> So long as the left ventricle is capable of propelling its contents, the corresponding auricle, being protected by its valve, remains secure. Hence, in a large majority of cases, the auricle is perfectly exempt from disease, while the ventricle is even enormously thickened and dilated. But when the distending pressure of the blood preponderates over the power of the ventricle, its contents, from not being duly expelled, constitute an obstacle to the transmission of the auricular blood. Hence the auricle becomes overdistended, and the obstruction may be prop-

2. Lancisi, J. M.: De motu cordis et aneurysmatibus, Rome, J. M. Salvioni, 1728.

3. de Senac, J.-B.: Traité de la structure du coeur, de son action, et de ses maladies, Paris, Jacques Vincent **2**: 413, 1749.

4. Morgagni, G. B.: De Sedibus et Causis Morborum, Ex. typog. Remondiniana, Venice, 1761, letters XVII and XVIII.

5. Corvisart, J. N.: Essai sur les maladies et les lésions organiques du coeur et des gros vaisseaux, Paris, Migneret, 1806.

6. Bertin: Memoirs, Académie royale des sciences, Paris, 1811, quoted by Hope,[7] p. 177.

7. Hope, James: A Treatise on the Diseases of the Heart and Great Vessels, London, William Kidd, 1832, pp. 196, 205, 346, 352, 357.

agated backward through the lungs to the right side of the heart, and there occasion the same series of phenomena. When the obstruction thus becomes universal, as is frequently the case, it may either happen that all the cavities are thickened, or those only which, from their conformation, have the greatest predisposition to it.

The primary effect of universal obstruction of the lungs by engorgement is to produce edema of their cellular tissue and dyspnea; whether the latter depends solely on the engorgement or partly also on spasm of the bronchi excited by the irritation of that congestion, is difficult positively to determine, though the latter is highly probable.

Asthma has been too much regarded as independent of disease of the heart. Long treatises have even been written upon it without ever mentioning disease of this organ as one of its causes. It is, therefore, necessary to dwell a little on this subject, not only for the purpose of showing the magnitude of the error, but of making the reader acquainted with all the habitudes and aspects of a complaint, which is perhaps the most distressing in the whole catalogue of human maladies.

Asthma from disease of the heart often imitates the characters of the other varieties; and this perhaps for a very simple reason; that the lungs are in much the same state as in those varieties. Thus, it is *humid* when there is permanent engorgement of the lungs, causing copious seromucous effusion into the air vessels, as from contraction of the mitral valve. It is *dry*, when the engorgement is only temporary, as in cases of pure hypertrophy. It is *continued* when there is a permanent obstruction to the circulation; and any of the varieties may be *convulsive* when the heart has sufficient power to palpitate violently. The worst cases of convulsive asthma from disease of the heart are those of hypertrophy with dilatation and a valvular or aortic obstruction.

I apprehend that whatever be the organic cause of asthma, it requires for its production the superaddition of a state of the nervous system leading to spasmodic constriction of the bronchial tubes. In what this state consists, we can no more say than why one female falls into hysteria, and another does not, on seeing a third laboring under that affection; or why one lady "dies of a rose in aromatic pain," while another prefers it to all other perfumes.

Mind you, this was all written 101 years ago. If only I had read older medical works of this high standard earlier and more diligently I should have been spared much pondering and should have realized that we have been gradually rediscovering some old ideas about left ventricular strain and about the probable mechanism of cardiac asthma, though on sounder foundation of course than it was once possible to build. It is astonishing that, with the passage of time, Hope's teachings were neglected. Already within thirty years of Hope's book one finds that Stokes [8] has hardly a word to say on these points and after him right up to the present day most of the foremost English works on the heart in succession are strangely silent on this very important subject. There is usually in these books ample discussion of increased pressure and congestion of the systemic veins in heart failure but little or nothing about a similar state of congestion of the veins in the lungs due to failure of the left ventricle, which is an early and common, and often amenable, functional disturbance, at least as important (and probably more important) to recognize as is failure of the whole heart or of the right ventricle alone. Dyspnea is universally acknowledged to be a common early symptom of heart failure or usually stated to be the first evidence of such failure even before there is any sign of increased pressure in the systemic veins, but its true significance and its pathogenesis are too often passed by, and cardiac asthma, though mentioned, receives scant discussion.

8. Stokes, William: The Diseases of the Heart and the Aorta, Dublin, Hodges & Smith, 1854.

However, there have been in the present generation here and there, a few English writings that recognize left ventricular failure without right ventricular failure and I shall quote briefly from three. Hirschfelder,[9] in 1918, wrote:

> Shortness of breath is usually the earliest and most common sign of cardiac failure and especially of failure of the left ventricle. . . . Cough, dyspnea, cardiac asthma, pulmonary hemorrhage constitute a group of symptoms characteristic of stasis in the pulmonary veins (broken pulmonary compensation), just as cyanosis, enlargement of the liver, and ascending edema are characteristic of failure of the right heart. In Wilkinson King's "safety-valve action of the right ventricle," failure of the latter substitutes a state of broken systemic compensation for one of broken pulmonary compensation.

G. Canby Robinson,[10] who stimulated his school at Nashville to pursue the study of heart failure, wrote in 1927 as follows:

> In our study of patients we are able to distinguish cases in which the left side of the heart is inefficient relative to the right side of the heart, from those in which the right side of the heart is relatively inefficient. While this distinction cannot be made with certainty in all cases, some cases show a disturbance in the pulmonary circulation out of all proportion to the disturbances in the systemic circulation. These cases are suffering, we believe, from relative failure of the left ventricle, which is unable to handle properly the blood sent to it by the right ventricle. Other cases show edema of the extremities and congestion of the abdominal viscera while the pulmonary circulation shows no evidence of being disturbed. In such cases the right ventricle is relatively inefficient, and is unable to receive and propel all the blood sent to it by the left ventricle. In many cases the disturbance of coordination between the ventricles affects both the greater and lesser circulations, so that both show evidence of heart failure.

Soma Weiss,[11] in 1931, wrote that "in early stages of circulatory failure changes occur in the pulmonary circulation," that "changes in the pulmonary circulation may be independent of the larger circulation," that "one does find early [in heart failure] a reduction of the vital capacity of the lungs" and that "dyspnea in the early stage of circulatory failure is produced through nervous communications between the pulmonary system and the medulla and not by local chemical changes within the respiratory center." Weiss and his associates have continued an active interest in heart failure and have published other more recent papers on the subjects of cardiac asthma,[12] the state of the peripheral and pulmonary circulation in various types of heart failure,[13] and the effect of digitalis.[14] Their work will be eventually assembled in detail and will include roentgenologic observations by Dr. Robb.[15]

On turning to the French and German literature one finds clear recognition of the syndrome of left ventricular failure in the writings of the present day and back over a period of fifty years or more. In 1889, for example, Fraentzel[16] attributed pulmonary edema to

9. Hirschfelder, A. D.: Diseases of the Heart and Aorta, ed. 3, Philadelphia, J. B. Lippincott Company, 1918, p. 216.
10. Robinson, G. C.: The Disturbances of Cardiac Function Leading to Heart Failure, South. M. J. **20:** 222 (March) 1927.
11. Weiss, Soma: Circulatory Adjustments in Heart Disease, Ann. Int. Med. **5:** 100 (Aug.) 1931.
12. Weiss, Soma, and Robb, G. P.: The Mechanism and Treatment of the Paroxysmal Dyspnea and Asthma Associated with Heart Disease, New England J. Med. **205:** 1172 (Dec. 10) 1931.
13. Weiss, Soma, and Robb, G. P.: The Treatment of Cardiac Asthma (Paroxysmal Cardiac Dyspnea), M. Clin. North America **16:** 961 (Jan.) 1933.
14. Robb, G. P., and Weiss, Soma: Effect of Digitalis and Rest on Pulmonary and Peripheral Circulation in Patients with Circulatory Failure Caused by Heart Disease, Proc. Soc. Exper. Biol. & Med. **29:** 1231 (June) 1932.
15. Weiss, Soma: Personal communication to the author.
16. Fraentzel, Oscar: Vorlesungen über die Krankheiten des Herzens: I. Die idiopathischen Herzvergrösserungen, Berlin, August Hirschwald, 1889, p. 53.

acute distention of the left ventricle; in his lectures he wrote: "We observe frequently cases of edema of the lungs if the right ventricle still works with its normal strength while the left flags in its work." Fraentzel was also one of the first to emphasize the clinical significance of the important type of gallop rhythm as a sign of serious cardiac weakness, although Potain,[17] Traube [18] and Barié [19] had all referred to it earlier and recognized its importance. A present-day French authority, Lian,[20] has emphasized the clinical significance of the syndrome of left ventricular insufficiency, distinguishing between paroxysmal and continuous and between mild and severe types. He wrote in 1910 that "breathlessness on effort, palpitation, left ventricular dilatation, gallop rhythm, passive pulmonary congestion reveal above all a left ventricular insufficiency which is but little pronounced and has developed

hearts in which some factor of strain is evident (and in most hearts such factors are obvious both in their presence and in their influence) the left ventricle is under a burden much more often than is the right. The total of essential hypertension, coronary thrombosis, and aortic valve lesions is far greater in the community than is that of mitral stenosis, pulmonary valve stenosis and pulmonary disease sufficiently extensive to act as a strain on the heart.

Among the last 100 patients of mine who showed heart failure by evidence either in the pulmonary or in the systemic circulation or in both, and in whom etiologic factors were clear, 74 per cent showed primary left ventricular strain, 14 per cent showed primary right ventricular strain, and 12 per cent showed strain on both ventricles (table 1). Over the period of time during which these 100 cases consecutively occurred

TABLE 1.—*Heart Strain and Failure*

Total 400 Cases, per Cent			Author's Cases						Massachusetts General Hospital Cases of Congestive Failure
						Among the 100 Cases of Congestive Heart Failure			
			Failure	Strain Without Failure	Total	Cardiac Asthma	Proto-diastolic Gallop Rhythm	Pulsus Alternans	
64.3	Left ventricle 68.8%*	Hypertension	34	99	133	7	10	4	20
		Coronary thrombosis	17	43	60	3	6	2	17
		Both	12	11	23	8	10	2	18
		Aortic stenosis without mitral disease, with or without hypertension	7	14	21	3	1	0	0
		Aortic regurgitation without mitral disease, with or without hypertension	4	13	17	2	3	0	4
		Both	0	2	2	1	0	0	2
		Congenital coarctation of the aorta	0	1	1	0	0	0	0
		Total	74	183	257	24	30	8	61
15.0	Right ventricle 16%*	Mitral stenosis	11	39	50	3	0	0	16
		Pulmonary disease	3	5	8	0	0	0	3
		Congenital (pulmonary stenosis)	0	2	2	0	0	0	0
		Total	14	46	60	3	0	0	19
14.7	Both ventricles 15.7%*	Aortic and mitral disease	8	26	34	0	0	0	15
		Mitral regurgitation	2	11	13	0	0	0	0
		Hypertension and mitral stenosis	..	..	..	..	..	..	1
		Mitral stenosis and coronary occlusion	..	..	..	..	..	..	1
		Congenital (patent ductus arteriosus, etc.)	0	6	6	0	0	0	0
		Thyrotoxicosis	0	3	3	0	0	0	3
		Anemia	1	1	2	0	1	0	0
		Acute rheumatic	1	0	1	0	1	0	0
		Total	12	47	59	0	2	0	20
	Total cases		100	276	376	27	32	8	100
6.0	Cause unknown		16	8	24				
100	Grand total				400				

* These percentages refer to the 376 cases with definite factors of strain.

slowly. In these cases generally the failure of the left heart induces that of the right heart." Cardiac asthma he recognized as evidence of acute left ventricular insufficiency.

This brief historical survey will suffice to show the vicissitudes of the conception of left ventricular failure and to point to its common neglect in medical practice and writings of the English speaking world of the present day.

THE FREQUENCY OF LEFT VENTRICULAR FAILURE

A brief analysis of cases of congestive heart failure reveals at once the preponderant frequency of failure of the left ventricle with or without failure of the right ventricle, which so often follows. The majority of

there were 16 other cases that presented congestive failure without clearly recognizable factors. Also there were in the same time interval 284 cases of organic heart disease without evidence of congestive failure; among 276 of these in which etiologic factors were clear, strain was preponderantly on the left ventricle in 183, or 66.3 per cent, preponderantly on the right ventricle in 46, or 16.7 per cent, and on both ventricles in 47, or 17.0 per cent (table 1).

Thus, among 400 consecutive cases of organic heart disease the left ventricle was under the greatest strain in 64.3 per cent, the right ventricle in 15 per cent, both ventricles in 14.7 per cent, and in 6 per cent the type or primary location of the strain was not clear.

These cases, which I have studied personally in the past two years, illustrate the point already emphasized that congestive failure of the left ventricle is more common and important than that of the right and should be looked for zealously, since by early recognition and proper treatment not only may the left heart failure

17. Potain: Du rythme cardiaque appelé bruit de galop, Union méd., 1875, quoted by Fraentzel,[16] p. 59.
18. Traube: Gesammelte Beiträge zur Pathologie und Physiologie, Berlin, A. Fränkel, **3**, 1878, quoted by Fraentzel,[16] p. 57.
19. Barié, E.: Sur la pathogénie du bruit de galop, Progrès méd. **8**: 595, 1880.
20. Lian, C.: Le syndrome d'insuffisance ventriculaire gauche, Presse méd. **18**: 49, 1910.

be relieved but the right heart failure, which is likely to follow, may be prevented or postponed.

As a control study of these cases of my own, seen in private practice, I have analyzed the last 100 cases of congestive heart failure with clear factors of strain seen in the general medical wards of the Massachusetts General Hospital, expecting a somewhat higher incidence of rheumatic heart disease with mitral stenosis than in my private practice. This survey (table 1) gave the following results: primary left ventricular strain, sixty-one cases, or 61 per cent (systemic hypertension, twenty; coronary disease or thrombosis, seventeen; both systemic hypertension and coronary disease, eighteen; aortic stenosis or regurgitation or both without mitral valve disease and with or without hypertension, six); primary right ventricular strain, nineteen cases, or 19 per cent (mitral stenosis, sixteen; extensive pulmonary disease, three); and strain on both ventricles, twenty cases, or 20 per cent (aortic and mitral valve disease, fifteen; thyrotoxicosis, three; mitral stenosis aortic regurgitation, and coronary occlusion, one; mitral stenosis and systemic hypertension, one).

In passing, it may further be pointed out that only about one in four of the cases of organic heart disease that I have seen in consultation has shown evidence of heart failure or insufficiency. This is especially significant, since my patients are at least as severely affected as those seen in general practice in the community at large. The point I would raise here is that the central interest of the practitioner of medicine should not, as some have asserted, be in the cases of failure, which of course he should recognize and treat properly, but rather in the cases without failure that have more promise for the future and that need recognition much more than do the more advanced cases; advice and treatment for these should help to prevent or at least to postpone the onset of heart failure.

SYMPTOMS AND SIGNS OF LEFT VENTRICULAR FAILURE (WITH OR WITHOUT RIGHT VENTRICULAR FAILURE)

I shall now take up briefly the symptoms and signs by which one may recognize left ventricular failure (with or without right ventricular failure). All of them are not necessarily present in the same case any more than is all the classic evidence present at one time in a case of subacute bacterial endocarditis, but their assemblage under one heading, which has not been completely carried out before so far as I know, will, I am sure, be helpful.

1. *Dyspnea of Cardiac Origin Without Mitral Valve Disease or Congenital Defects.*—This kind of shortness of breath has always rightly been emphasized as evidence of cardiac weakness and often recognized as occurring before any evident increase of pressure in the systemic veins. Whatever its nervous mechanism may be and no matter how it is excited, its fundamental cause is almost certainly an increase in pressure in the pulmonary circulation with engorgement of the blood vessels. Resulting from this engorgement of the vessels there are two immediate effects—an encroachment on the air spaces of the alveoli and a stiffening of the alveoli to cause a state of functional emphysema. That this is so can be deduced from the other signs that I shall discuss shortly; namely, decrease of vital capacity, visible engorgement of the blood vessels of the lungs on roentgen examination, and accentuation of the second heart sound in the pulmonary valve area. The failure of many authorities to visualize engorgement of the pulmonary vessels resulting from failure of the left ventricle is of course due to the fact that they have been hidden from view for so long and that engorgement of the systemic veins, so readily seen, follows often very quickly after left ventricular failure and attracts undue attention. In my own cases in which it was possible to estimate the time interval between left ventricular failure and right, as best known in instances of paroxysmal dyspnea, the results varied greatly from a few hours to months or even years. As an illustration of a long time interval, I would cite the instance of a physician who has been under my observation for the past five years with pulsus alternans and protodiastolic gallop rhythm almost constantly and dyspnea on effort or paroxysmally at night (much benefited by digitalis), who went for nearly five years before he showed any increased venous pressure behind the right ventricle; when it did appear, it was in the liver largely and was dispelled by rest and digitalis.

2. *Cardiac Asthma or Acute Pulmonary Edema.*—This is an extremely important clinical condition, evidence as a rule of acute failure of the left ventricle but open to an amazing amount of controversy in the past. Some there are who evidently have never seen a case of cardiac asthma and who therefore doubt its existence, but those of us who have seen a number of patients with this most distressing condition, usually in the middle of the night, can doubt neither its existence nor its significance. One of the important points about it is that it may come sometimes without previous warning; that is, with little or no dyspnea previously. About half of the patients with cardiac asthma whom I have seen recently have had such an experience. Almost invariably there is serious heart disease involving the left ventricle in patients with cardiac asthma—hypertensive enlargement, infarction from coronary thrombosis, or aortic valve disease with stenosis, regurgitation or both. There are a few exceptions. Of the twenty-seven patients with cardiac asthma or acute pulmonary edema whom I have encountered in private practice in the past two years, twenty-four had heart disease involving the left ventricle, as previously noted, and three had mitral stenosis; this last small group is an interesting, significant and much neglected one—it is most probable that in them the cardiac asthma is precipitated by pulmonary vascular congestion not the result of acute failure of the left ventricle but rather the result of the tachycardia and overactivity of the right ventricle (generally from overexertion) in the face of marked mitral stenosis. Dr. Sylvester McGinn and I are about to report a group of cases of this nature.

Among my series of 100 recent cases of congestive heart failure, cardiac asthma or acute pulmonary edema occurred twenty-four times, in thirteen cases without any evidence of engorgement of the systemic veins and in eleven cases with such systemic venous engorgement occurring later on or coincidentally. I would add that in my experience, although acute pulmonary edema may occur without asthmatic breathing, such an occurrence is rare, somewhat comparable perhaps to the infrequency with which one encounters cases of acute coronary thrombosis without pain.

3. *Vital Capacity of the Lungs.*—A few individuals have followed the important lead of Peabody [21] and his

21. Peabody, F. W., and Wentworth, J. A.: Clinical Studies of the Respiration: IV. The Vital Capacity of the Lungs and Its Relation to Dyspnea, Arch. Int. Med. **20**: 443 (Oct.) 1917.

associates and of Pratt [22] in emphasizing the value of spirometric measurements in estimating the degree of pulmonary congestion in cardiac failure. Most of us have tended to scorn such a test on the score that it is not sensitive enough and that it is too subject to influence by all sorts of factors besides heart failure. However, from recent experience, as evidenced in an example to be recounted later, I would advise the resumption of this test in selected cases, particularly in those cases of left ventricular strain in which a control base line has been established either before failure has occurred or after it has been dispelled. Used with judgment, the vital capacity may be as satisfactory a gage of pulmonary vascular engorgement as is measurement of the systemic venous pressure instrumentally or by inspection of the neck veins. West's [23] standards of 2.5 liters of vital capacity per square meter of body surface for men and 2 liters for women are suitable as average normal figures for comparison.

4. *Roentgen Evidence of Pulmonary Vascular Congestion.*—With the advent of roentgen study, it became possible to see the pulmonary artery and great veins and their branches, and in 1920 Assmann [24] suggested measurements of the shadows of the lung hilus to determine increases under abnormal conditions. Assmann found that the normal width of the shadow of the lung hilus was from 12 to 13 mm. (more easily measured on the right side). Of twenty patients studied by him with a hilus shadow width of over 15 mm., nineteen had organic heart disease, some with failure of the left ventricle. Dietlen [25] and a few others followed Assmanns' example but except to make general statements about the hilus shadows and lung markings in heart disease, little has been done in careful study of this relationship. Holmes,[26] in 1923, reported the increase of lung markings in heart disease as a condition that should be differentiated from pulmonary disease. Recent experience, as in the case to be reported, has caused me to believe that here one may have a useful, perhaps even a quantitative, method for the determination of the degree of pulmonary congestion in left ventricular failure. Of course, in mitral stenosis and congenital heart disease and in pulmonary disease the hilus shadows may be large, too, but of these conditions I am not now speaking. With Dr. Holmes and Dr. McGinn I am making further studies. In the case cited later, the area of the hilus shadows decreased one half in two weeks with improvement under digitalis therapy.[27]

5. *Pulsus Alternans.*—I come finally to three additional signs of weakness or failure of the left ventricle; the first one, alternation of the pulse, is practically the only pathognomonic sign known of such weakness. It is a common sign, if one includes, as one should, pulsus alternans following premature contractions for a few beats. Only the most marked grades can be picked up by palpation of the arterial pulse, and of course such a condition must not be confused with bigeminal heart rhythm. Moderate grades of alternation can be picked up by sphygmomanometry but the slightest grades satisfactorily only by sphymography. All grades are important, but it is open to question whether one should go to the trouble of hunting for the slightest grades by mechanical pulse tracings. If this is done, slight grades can often be found, as I found some years ago.[1b] Probably it suffices to study carefully the pulse coming under the blood pressure cuff at the systolic pressure level. The finding of pulsus alternans is most common with heart weakness in heart disease due to hypertension, coronary disease, or aortic valve disease. I noted the presence of definite pulsus alternans of 2 or 3 up to 10 or 15 mm. of mercury in 8 of the 100 cases with heart failure that are tabulated. Among these eight patients four had hypertensive heart disease, two coronary thrombosis, and two the combination of hypertension and coronary thrombosis. All but one patient had also protodiastolic gallop rhythm. Four of the eight have died within this interval of two years. Most certainly, had I searched more diligently I would have found more cases among the other ninety-two.

6. *Protodiastolic Gallop Rhythm.*—A loud third sound occurring shortly after the second and heard best at the cardiac apex, in the absence of mitral stenosis and of auriculoventricular block, is one of the most valuable and neglected signs known of weakness and probably of dilatation of the left ventricle. Most English textbooks are astonishingly silent about this sign, which I find to be extremely helpful in confirming a diagnosis of left ventricular weakness. It is often attended by a palpable impulse. When the heart rate is fast, the sound and impulse fall in the middle of diastole or even at the end of it, but when the rate is slower its protodiastolic timing is more evident. It may even occur when the auricles are fibrillating. This sign was present in 32 of the 100 cases of my series outlined, being confined almost entirely (30 cases) to those patients with preponderant left ventricular strain; in the remaining 2 cases it was found with severe anemia and with failure in acute rheumatism in childhood. Among the 30 patients with preponderant left ventricular strain, 10 had a history of chronic hypertension, 6 of coronary thrombosis, 10 of both hypertension and coronary thrombosis while 4 had aortic valve disease, 3 with regurgitation and 1 with stenosis. Ten of the patients had had cardiac asthma. Of the 32 patients, 13 died within two years of the finding of the gallop rhythm.

7. *Increase in Intensity of the Pulmonary Second Sound.*—This is often a helpful confirmatory sign of increased pressure in the pulmonary circulation, especially in cases of essential hypertension in which with the onset of failure of the left ventricle the accentuation of the aortic second sound gives way to that of the pulmonary second sound with restoration of the original condition when the failure is cleared.

Murmurs are of little or no importance in cases of failure of the left ventricle. They may or may not be present. The commonest murmur when one is found is a systolic blow at the apex, probably denoting relative mitral insufficiency. Weakness of the apical first sound is occasionally but not constantly found. Auricular fibrillation may be found with failure of the left ventricle, but it has been my experience that this is usually not the case; it is common knowledge that it is much more frequent in cases of mitral stenosis. In my own series of 100 cases of congestive failure presented in table 1, it occurred twenty-one times, in ten of the

22. Pratt, J. H.: Long-Continued Observations on the Vital Capacity in Health and Heart Disease, Am. J. M. Sc. **164:** 819 (Dec.) 1922.

23. West, H. F.: Clinical Studies on the Respiration: VI. A Comparison of Various Standards for the Normal Vital Capacity of the Lungs, Arch. Int. Med. **25:** 306 (March) 1920.

24. Assmann, H.: Ueber Veränderungen der Hilusschatten bei Herzkrankheiten, München. med. Wchnschr. **67:** 177 (Feb. 13) 1920.

25. Dietlen, H.: Herz und Gefässe in Röntgenbild, Leipzig, Johann A. Barth, 1923.

26. Holmes, G. W., and Dann, D. S.: Cardiac Pneumofibrosis, Am. J. Roentgenol. **10:** 343 (May) 1923.

27. Definite roentgen evidence of actual edema of the lungs themselves may be found in cases of high grade congestive failure; it is not an early sign. When there is emphysematous or asthmatic breathing due to congestive failure, the diaphragmatic excursions may be much limited with the diaphragm at a low level, as in bronchial asthma.

eleven cases of mitral stenosis, in three cases of hypertension, in five cases of coronary disease, and in three cases of hypertension and coronary disease combined. Tachycardia of normal (sino-auricular) origin is quite common in congestive failure of the left ventricle, tending to disappear when there is relief by digitalis therapy or rest. Paroxysmal tachycardia may precipitate failure of a heart with little reserve.

IMPORTANCE OF THE RECOGNITION OF LEFT VENTRICULAR FAILURE WITHOUT RIGHT VENTRICULAR FAILURE

Why is it so important to recognize left ventricular failure? Because it is so amenable to treatment. Contrary to the idea expressed by so many of the English school in our own generation, digitalis is usually a great aid in the treatment of the left-sided heart failure even though the cardiac rhythm in such cases generally is regular. If auricular fibrillation happens to be present, so much the better; but the idea that it must be present to permit benefit from digitalis is certainly wrong. This has been pointed out clearly by Christian.[28] Experience with many cases in the past ten years has convinced me of the truth of his teaching. The case here reported is a clear example. Of course, rest as well as digitalis and sometimes, if necessary, diuretics may afford much relief but digitalis alone may turn the scale as in the present case, which can be easily and often duplicated.

REPORT OF CASE

A man, aged 57, a clerk, reported to the Cardiac Clinic of the Massachusetts General Hospital, March 1, 1933, complaining of a slight sense of smothering at night, which had forced him to use two pillows during the previous month. There had been a slight cough. Examination showed no abnormalities except for considerable cardiac enlargement (the apex impulse and the left border of dulness in the sixth left intercostal space, 11 cm. from the midsternum and 3 cm. beyond the midclavicular line), accentuated pulmonary second sound, which was louder than the aortic second sound, a protodiastolic gallop rhythm at the cardiac apex, a loud blowing apical systolic murmur, and hypertension (systolic blood pressure 170 to 175 mm. of mercury in both arms and diastolic pressure 125). There was no engorgement of the cervical veins; the liver was not enlarged and there was no edema of the legs or feet. An electrocardiogram showed normal rhythm at a rate of 100, abnormal left axis deviation (angle of —41 degrees), slight widening of the QRS waves, and inverted QRS_2. Vital capacity was 3,000 cc. (the best of three tries). An orthodiagram showed marked general cardiac enlargement; the measurements were as follows: from the midline to the most distant right border, 5.3 cm.; to the most distant left border, 11.3 cm.; transverse diameter, 16.66 cm.; long diameter, 15.6 cm.; internal diameter of thorax, 25.4 cm.; cardiothoracic ratio, 61 per cent; great vessels, 4.8 cm.; cardiac area, 152 square centimeters. The hilus shadow area was: right, 19.6 square centimeters; left, 6.9 square centimeters.

The patient was given digitalis in the form of pills, each of 0.1 Gm. (1½ grains), of the dried leaf, and was told to take one pill three times a day after meals for the first week (2.1 Gm.) followed by one pill (0.1 Gm.) daily thereafter *without making any other change in his activities.* Two weeks later, March 15, he returned to the clinic feeling perfectly well, without dyspnea and stronger and more fit than he had been for a long time. The changes in the significant observations are given in table 2. The electrocardiogram showed no change except that the heart rate had dropped from 100 to 80, and there was evidence of the effect of digitalis on the T waves.

TABLE 2.—*Observations in Case of J. M.*

Date	Digitalized	Paroxysmal Dyspnea	Protodiastolic Gallop Rhythm	Pulsus Alternans	A_2 and P_2	Orthodiagram: Vital Capacity, Cc.	Orthodiagram: Area Lung Hilus Shadows, Sq.Cm.	Orthodiagram: Area Heart Shadow, Sq.Cm.	Pulse Rate	Blood Pressure: Systolic	Blood Pressure: Diastolic
March 1	0	+	+	0	$P_2 + > A_2$	3,000	26.5	152	96	170	125
March 15	+	0	0	0	$A_2 + > P_2$	3,500	13.0	150	78	175	110

SUMMARY AND CONCLUSIONS

Weakness and congestive failure of the left ventricle are common whether or not there is an associated right ventricular failure. It is important to recognize this fact and to be able to diagnose the condition, since treatment by the administration of digitalis, by rest, or by both these measures is usually of great help, even though the heart rhythm is normal and even though there is no evidence of congestion of the systemic veins.

The left ventricle is the primary site of strain four to five times more often than is the right ventricle, essential hypertension, myocardial infarction from coronary thrombosis (which rarely involves the right ventricle), and aortic valve disease exceeding in total frequency mitral stenosis, pulmonary valve stenosis, and pulmonary disease sufficient in degree to be a strain. Cases of heart failure without obvious factors of strain like those mentioned are not common. The most frequent cause of strain on, and enlargement and failure of, the right ventricle is left ventricular failure.

There are several important symptoms and signs that point to weakness and failure of the left ventricle and which should permit its recognition in the absence of mitral stenosis and congenital heart disease; they are (1) cardiac dyspnea, (2) cardiac asthma or acute pulmonary edema, (3) diminishing vital capacity due to heart disease, (4) engorgement of the roentgen shadows of the lung hilus blood vessels, (5) protodiastolic gallop rhythm at the cardiac apex in the absence of heart block, (6) pulsus alternans, and (7) increasing accentuation of the pulmonary second heart sound. The failure in the past easily to visualize congested blood vessels in the lungs undoubtedly accounts for the unwarranted preponderant emphasis placed on increase of systemic venous pressure in congestive heart failure.

Massachusetts General Hospital.

28. Christian, H. A.: Digitalis Therapy: Satisfactory Effects in Cardiac Cases with Regular Pulse Rate, Am. J. M. Sc. **157**:593 (May) 1919.

Character, Knowledge and Skill.—The family physician, then, as he has adjusted himself to the demands of society, though temporarily overshadowed by the specialist, in all probability more nearly meets the needs of our civilization in caring for the great majority of illnesses than would any figmentary figure which one might devise. His effectiveness in his field of activity depends upon character, knowledge and skill, rather than upon material resources or organization. The problem is to attract such men into the profession of medicine and then properly educate them—matters which are neither new nor unappreciated.—Harvey, S. C.: Oikonomia Medika, *Yale J. Biol. & Med.* **5**:323 (March) 1933.

FOOD POISONING DUE TO STAPHYLOCOCCI

REPORT OF AN OUTBREAK

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The exhaustive study of the subject of food poisoning in Great Britain by Savage and White [1] covered a period of several years. One hundred outbreaks were involved, incriminating such foodstuffs as cooked meats, fish, fowl, cheese, milk, cake and canned goods of various sorts. The organisms chiefly concerned were Bacillus aetrycke, to which they attribute three fourths of these cases. Next found in order of frequency was Bacillus enteritidis of Gürtner. From all evidence accumulated, as the result of a number of years' study, they have not found a single instance in which Bacillus paratyphosus B was the cause. Further, they feel that cases reported as due to B. paratyphosus B were in reality due to B. aetrycke, since all strains of paratyphoid bacilli studied came from paratyphoid fever and none possessed the irritant qualities necessary to produce the typical facies of acute food poisoning.

As far as I have been able to ascertain in going over the literature, no cases of acute gastro-enteritis due to staphylococci have been reported by these or other workers as occurring in Great Britain. There were eight outbreaks from poisonous cheese in their studies. One of these, they found, was due to organisms of the Salmonella group (B. suipestifer). In the other seven they failed to find any of the organisms of this group nor did they find evidence of the substance tyrotoxicon, detected in poisonous cheese by Vaughan,[2] but later refuted by him as the cause of poisoning from such sources.

Staphylococci as a cause of acute food poisoning outbreaks were not recorded in the literature until 1914, when Barber [3] reported the occurrence of cases of acute gastro-enteritis on a farm in the Phillipines from milk of a certain cow. Cases did not occur from ingestion of fresh refrigerated milk but from milk kept at room temperature. He isolated a yellow and a white staphylococcus from the milk. The white staphylococcus inoculated into preserved milk produced symptoms in the investigator while the yellow one did not.

In 1930, Dack and his co-workers [4] reported finding a yellow staphylococcus in samples from a Christmas cake, which had caused acute gastro-enteritis in ten persons in Chicago in 1929. Bacteria-free filtrates produced by growing the organisms from two to three days at 37 C. produced violent gastro-intestinal symptoms when fed to human volunteers in quantities of from 2 to 10 cc.

The same year Jordan [5] reported an outbreak of acute food poisoning occurring in Puerto Rico and affecting four persons. From a sample of cheese sent to him he isolated yellow staphylococci. Broth filtrates prepared in the way mentioned produced typical gastro-intestinal symptoms when fed to three human volunteers. In 1931, Jordan and Hall [6] reported another instance in which two persons in the Panama Canal Zone were made ill and in which case staphylococci were isolated from chicken gravy. Broth filtrates likewise produced typical symptoms in several human volunteers.

In 1931, Jordan [7] reported an outbreak due to yellow hemolytic staphylococci isolated by Dr. G. M. Dack at the laboratories of the University of Chicago from specimens of devil's food layer cake purchased at a store in Milwaukee, which caused acute illness in four persons. Broth filtrates produced gastro-enteritis in two of three human volunteers when given as little as 2 cc. in pasteurized milk. Two others, given 5 cc. in the same manner, were likewise affected. Two human volunteers who ate some of an experimental cake inoculated with some of the organisms were also made ill.

Ramsey and Tracey,[8] in 1931, reported, from a study of malt flavor in milk, the isolation of an orange colored staphylococcus thought to be the cause of "off flavor." Tasting milk inoculated with the organism produced violent symptoms of acute gastro-enteritis in one of the authors (Ramsey). In 1932, Tanner and Ramsey,[9] working with the same organism, state that several of a group of twenty individuals who visited the laboratory for the purpose of testing "off taste" of milk inoculated with the organism reported that they were made ill, and that one member of the staff was made ill from drinking pure cultures of the organism. Jordan,[7] who reviews the literature in connection with food poisoning outbreaks, cites eight in which staphylococci, while not absolutely incriminated by the experimental feeding of human volunteers, certainly appear, from all the evidence presented, to have been the cause.

In addition to this accumulated evidence, incriminating staphylococci as the cause of at least six food poisoning outbreaks, a seventh recently studied is herein reported.

Following a dinner served to women students at a southern educational institution, at which chocolate eclairs were served as dessert, there was a severe outbreak of acute gastro-enteritis. There were 150 marked cases. Of these, 75 were very severe; the remainder, less so. In addition, there were a number of others who complained of slight nausea and weakness and a few cases reported later but not seen by attending physicians. There were approximately 325 persons who ate eclairs. Those who did not were not affected. There were a few visitors made ill, who ate dinner elsewhere and partook only of eclairs. Quite a number of the girls took the eclairs to their room, eating them around 6 p. m. and becoming ill about 9 o'clock. These constituted the most severe cases. Not a single person who did not eat eclairs was made ill.

In checking up, as far as it was possible to do so, it is safe to estimate that at least 60 or 70 per cent of those who ate eclairs were affected to a degree. In the majority of cases, attacks were initiated within two or three hours following the meal, which was served at 1 p. m.

The eclairs were made by a local bakery. The pastry shells were made the day before and kept in the original baking pans. The custard filler was made that morning

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8. Ramsey, R. J., and Tracey, P. H.: Food Poisoning Probably Caused by Orange Colored Staphylococcus from Udder of Apparently Healthy Cows, Proc. Soc. Exper. Biol. & Med. **28**: 390 (Jan.) 1931.
9. Tanner, F. W., and Ramsey, R. J.: Food Poisoning Due to a Yellow Micrococcus from Milk, Am. J. M. Sc. **184**: 80-85 (July) 1932.

and the shells were filled by means of a pressure gun, shells being held in the hand of the worker while being filled. Delivery was made about 11 a. m. The eclairs were kept at room temperature and served about 1:30 p. m.

There were several batches of eclairs. All were made of similar batches of ingredients but were not all filled with custard at the same time.

This fact, individual resistance, or the ingestion by some of relatively small portions of the pastry or the fact that some of the eclairs contained few or no organisms may account for the fact that more of those who ate eclairs were not made ill.

Symptoms were marked by nausea, salivation, abdominal pain, vomiting, extreme prostration, profuse diarrheal attacks, and chilliness. Some vomited at intervals of from ten to fifteen minutes and as many as twenty to thirty times. A few vomited throughout the night. Vomiting attacks became further spaced in some and in other patients ceased suddenly as they became better. Diarrheal attacks averaged from six to eight. Of the seventy-five pronounced cases, five patients, were near collapse. Three had a weak, rapid pulse.

Action of the Filtrates on the Seven Volunteers

	Minimum	Average	Maximum
Time before symptoms appeared	1 h. 45 m.	2 h. 15 m.	3 h.
Time before vomiting began	2 h.	3 h.	3 h. 20 m.
Number of vomiting spells	3	9	14
Interval between spells	10 m.	15 m.	20 m.
Vomiting persisted	1 h. 5 m.	2 h. 30 m.	4 h.
Time before diarrhea began	2 h. 30 m.	3 h.	4 h.
Time following onset of vomiting	15 m.	Coincident with	40 m.
Number of diarrheal attacks	2	5	13
Diarrhea persisted	2 h.	3 h. 50 m.	7 h.
Time elapsed before felt relief	3 h.	5 h. 30 m.	10 h.
Time elapsed before complete recovery	5 h.	17 h.	48 h.

Complaints following recovery: general weakness, soreness of abdominal muscles and slight headache

Blood pressures were not taken, since the attention of two attending physicians was focused on relieving the acute symptoms.

The short incubation period (from two to three hours), the symptoms and the facts regarding the eating of the eclairs led to the supposition that a staphylococcus was involved. As a matter of routine, dilution plates with Endo's medium were made of some of the custard filler and from the pastry. Numerous golden yellow staphylococcus colonies resulted, but nothing resembling the Salmonella group was observed. Agar dilution plates of the filler and crust likewise produced numerous golden yellow colonies, which proved to be staphylococci. Five different colonies were picked from different plates. Bacteria-free broth filtrates were prepared from forty-eight hour cultures of these organisms. Similar filtrates were prepared from two of four cultures sent me through the kindness of Dr. Leon C. Havens, director of laboratories, Alabama State Department of Health, to which some of the eclairs were sent by the local food and milk inspector. Ten cubic centimeter quantities of these filtrates were fed to each of eight volunteer medical students in 200 cc. of pasteurized milk. As controls, four students were given similar amounts of sterile broth of the same batch used for growing the organisms. This was likewise given in 200 cc. of pasteurized milk. The dosages were given numbers and mixed, so that no one knew whether he was getting plain or toxic broth. Of those receiving the bacterial filtrate, all were ill except one; he was slightly nauseated and felt weak. None of the controls were affected. The minimum period of onset was one hour and forty-five minutes, and the maximum period three hours. Symptoms were nausea, salivation, vomiting, diarrhea, extreme prostration, chilliness, sweating, abdominal pain and tetanic muscular contraction, especially of the flexors of the legs. These contractions were followed by intense muscular pains. All symptoms were manifestly similar to those exhibited by the girls who were sick following the meal.

Some of these volunteers were extremely ill, vomiting blood and bile and passing bloody stools. Several described their feelings to me by saying that if death was necessary for relief they were ready to die. Several, in attempting to walk upstairs to their rooms collapsed. Complete recovery occurred among all the accidental victims and the volunteers.

COMMENT

As has been the case with other workers who have reported food poisoning outbreaks due to staphylococci, the source of contamination of the eclairs could not be traced. Thorough bacteriologic examination of all ingredients used in the preparation of the custard filler and in preparation of the cake substance failed to show any organisms of the aureus variety. Those organisms present were comparatively few in number. Cooking experiments conducted at the bakery following inoculation of custard filler with staphylococci isolated from the eclairs showed that the heating process employed in making the custard destroyed them, as many as 2,500,000 staphylococci per cubic centimeter of liquid custard being completely destroyed by the cooking process, which is done at 185 F. (85 C.) for ten minutes. These experiments will be described in a subsequent paper. The bakery was scrupulously clean. No history of recent illness of any of the employees, colds, furunculosis, sore throats or hand infections could be elicited. It is probable, however, that contamination of the custard or pastry might take place during the cooling of the custard or filling of the pastry shells. As previously stated, they were filled by hand, a pressure gun being used to express the custard into the pastry shell. These so-called guns are constructed so that they are not easily cleaned. Considerable film of dried custard was noted in the one used in this particular instance, but, unfortunately, was seen too late for a satisfactory bacteriologic examination. Similarly, custard filler prepared and allowed to stand uncovered for several hours might easily become contaminated with virulent staphylococci through coughing and sneezing of the bakery personnel in making and handling them. If filled eclairs are allowed to stand at room temperature for a considerable period, it is easy to understand how heavy contamination might take place. Possible contamination following delivery might likewise be considered. Experiments in connection with these factors are now in progress.

SUMMARY

There have been, as far as could be ascertained, six well defined outbreaks of food poisoning due to staphylococci, proved epidemiologically and by production of symptoms in human feeding experiments. The outbreak of food poisoning due to a golden yellow staphylococcus here reported is the seventh.

Of the seven outbreaks, two were traced to milk, two to cake, one to cheese, one to chicken gravy, and one to chocolate eclairs. All such outbreaks reported have occurred in the United States or its possessions. The history, short period of onset and acute symptoms studied in cases and human volunteers should clearly point to the etiologic factor involved in future outbreaks.

It is probable that a large number of outbreaks of food poisoning in this country and elsewhere, in which the etiologic factor has not been determined, have been due to organisms of the staphylococcus group.

The source of contamination of food with these organisms has not yet been definitely ascertained. Pointing, however, to man himself, it appears that pastries, custard fillers, and the like, should be well protected against possible contamination in preparation and storage and that cheap cotton, paper or cellophane [10] mittens might be used in bakeries in the handling of the finished products. Custard fillers should be refrigerated immediately following preparation until ready for use. After baking, cakes and pasteries should be covered or placed in especially constructed cases and not left about in the open or on tables where they may be exposed to contamination from the coughing and sneezing of bakery personnel. These precautions could well apply to the storage and handling following delivery, especially in institutions where a large kitchen force is employed.

METHYLENE BLUE: A SYNERGIST, NOT AN ANTIDOTE, FOR CARBON MONOXIDE

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Methylene blue (methylthionine chloride U. S. P.) has recently been much in the lay press, not only as an antidote for cyanide, which it is, but also for carbon monoxide, which it is not.

P. J. Hanzlik [1] has reviewed the evidence that this substance is an antidote to cyanide. As he points out, the antagonistic property of methylene blue for cyanide was demonstrated experimentally as early as 1926 and has been confirmed by more recent work.

On the other hand, the alleged antagonism between methylene blue and carbon monoxide has no valid support. The theoretical basis of the claim for an antidotal action is derived from the brilliant investigations of Warburg; [2] but Warburg's observations on isolated tissues have no real bearing on carbon monoxide asphyxia in man. The experiments of Matilda M. Brooks [3] on animals are of little evidential value. The fact is that in its effect on man and other red-blooded animals, methylene blue acts, not as an antidote for carbon monoxide, but as a synergist. It not only fails to relieve carbon monoxide asphyxia; it may even induce fatalities that would not otherwise have resulted.

THE DISTINCTION BETWEEN CYANIDE POISONING AND CARBON MONOXIDE ASPHYXIA

The idea that methylene blue might be an antidote for carbon monoxide rests on an almost complete misapprehension of the physiology of carbon monoxide asphyxia. It is based on the assumption that carbon monoxide in the amounts generally fatal acts like cyanide by interfering with the oxidative ferment of the tissues. Warburg has indeed shown that even small amounts of cyanide may inhibit the action of this ferment and thus abolish the ability of the tissues to use oxygen.

Warburg has shown further that, when methylene blue is applied to isolated tissues, it tends to counteract the influence of cyanide on the tissue ferment. In this fact there is an apparent theoretical basis for the belief that methylene blue might counteract the effects of cyanide in the living body. In reality, as is now known, this is not the explanation of the antidotal action of methylene blue for cyanide in living red-blooded animals or human beings. It applies only to bloodless tissues.

Warburg has likewise shown that carbon monoxide may combine with the tissue ferment and inhibit its activity. But, as Warburg himself recognizes, the concentrations of carbon monoxide which are immediately fatal to men and animals are far lower than those which have any appreciable influence on the respiratory ferment of the tissues. The ferment has an affinity for carbon monoxide which is several thousand times less than that of hemoglobin for this gas. In experiments designed to show the inhibitory action of this gas on the ferment in isolated tissues it is therefore necessary to employ concentrations of carbon monoxide about a thousand times greater than those which kill men and animals. Warburg, working with tissues free from hemoglobin, used atmospheres of 95 per cent of carbon monoxide and only 5 per cent of oxygen. The hemoglobin of the blood, on the contrary, even in the presence of 21 per cent of oxygen and only 0.1 per cent of carbon monoxide, combines with the carbon monoxide to a fatal degree. For these reasons very small amounts of carbon monoxide are required to kill a man, while enormous concentrations are required to affect the respiratory ferment to any appreciable degree.

In further support of this view it may be recalled that Haggard [4] has shown that the nerve cells of the chick, when cultivated in vitro, will live and grow normally in the presence of 80 per cent of carbon monoxide and 20 per cent oxygen; and likewise that the elder Haldane [5] has shown that insects, which have no hemoglobin but which do have tissue ferment, are not in the least affected by an atmosphere containing 80 per cent of carbon monoxide and 20 per cent of oxygen. The same insects are, however, readily poisoned by small amounts of cyanide. Asphyxia from carbon monoxide results, then, not from inability of the tissues to utilize oxygen but from deficiency of oxygen in the blood. Methylene blue does not increase the supply of oxygen.

Furthermore, recent work by Wendel [6] indicates that the antidotal action of methylene blue for cyanide is

10. I have subjected cellophane to autoclaving at 15 pounds for twenty minutes without physical change.

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6. Wendel, W. B.: Methylene Blue and Cyanide Poisoning, J. A. M. A. **100:** 1054 (April 1) 1933; The Mechanism of the Action of Methylene Blue and Sodium Nitrite in Cyanide Poisoning, Proc. Am. Soc. Biol. Chem., April 10-12, 1933, page c.

to be found, not primarily in the action of this dye on the tissue ferment, but in an effect of the dye on the hemoglobin of the blood somewhat resembling that of carbon monoxide. Methylene blue converts hemoglobin into methemoglobin. Cyanide combines with methemoglobin. The formation of methemoglobin and the resulting withdrawal of cyanide from the blood and tissues in the formation of cyanmethemoglobin thus reduces the concentration of cyanide free to act as a poison on the tissue ferment. In this reaction of cyanide with the methemoglobin formed under the influence of methylene blue, rather than in any counteraction of the dye on the tissue ferment, is to be found the antidotal effect of methylene blue in cyanide poisoning.

This reaction of the dye in the blood, although beneficial in cyanide poisoning, is extremely harmful in carbon monoxide poisoning. Carbon monoxide exerts its poisonous effect by combining with hemoglobin and rendering it temporarily incapable of carrying oxygen. Methemoglobin is also incapable of carrying oxygen. The conversion of a portion of the hemoglobin of the blood into methemoglobin, instead of benefiting the anoxemia, exaggerates it. Thus on theoretical grounds methylene blue is definitely contraindicated in carbon monoxide poisoning. The experimental work to be here reported shows that its use intensifies asphyxia, delays recovery, and promotes death.

The administration of methylene blue in cases of carbon monoxide poisoning, as reported recently in the lay press, has generally been made after the patients had already eliminated a large part of the carbon monoxide that they had absorbed. This statement is true also of the cases reported by Geiger.[7] We agree with him that they show no definite advantage from treatment with methylene blue. After removal of the victim from the atmosphere of carbon monoxide, the elimination of the gas from its combination with hemoglobin is especially rapid when inhalation of oxygen and carbon dioxide is administered, as in most of the cases reported. The concentration of carbon monoxide in the blood may fall 20 or 30 per cent or more even in a quarter of an hour. In such cases the administration of methylene blue may not be fatal; but neither is it beneficial.

THE INFLUENCE OF "COUNTERSHOCK"

In the experiments of Brooks in support of the claim for the antidotal action of methylene blue, rats were exposed to approximately 1 per cent of carbon monoxide until unconsciousness developed, when they were removed from the gassing chamber. Some of the animals were then injected with a solution of methylene blue, while others were allowed to recover untreated. The criterion used for recovery was the ability of the rat "to run straight forward." It was found that the rats treated with methylene blue met this requirement in about half the time required for the untreated rats.

It is noteworthy that in these observations of Brooks the control rats were not injected even with saline solution. This point is of considerable importance; for in animals as small as rats, even without any treatment, the blood is quickly cleared of carbon monoxide, and recovery, if the animal recovers at all, is extremely rapid. During the period of recovery any strong sensory stimulus, particularly one involving pain such as puncture with a hypodermic needle, may induce both a psychic and a motor response. This well known fact is the basis of one of the many fallacious methods that have from time to time been suggested for the treatment of carbon monoxide poisoning; namely, "countershock." It has been observed on men that pain caused by slapping the face, pounding the soles of the feet or stretching the anal sphincter will sometimes hasten the return of consciousness. In one of the booklets telling employees of electric light companies how to resuscitate men from electrocution, this procedure of mechanical "countershock" was recommended. It was accompanied by a photograph showing an unconscious man with a hatchet placed suggestively beside him.

From our data it appears that the rats in the experiments of Brooks were subjected to "countershock." They walked quicker, if not straighter, because the pain of the injection woke them up. If a needle had been stuck into the control rats, as was done in our experiments, they would have waked up also.

EXPERIMENTS ON RATS

In our experiments the time required to produce death under inhalation of carbon monoxide was determined for rats injected with methylene blue and for rats injected with an equal quantity of saline solution. The carbon monoxide content of the blood at death was determined in each case. Six rats, all of the same weight, three with methylene blue, 20 mg. per kilogram, and three with saline solution, were placed under one large bell jar. Sufficient carbon monoxide was run in to make a concentration of 0.5 per cent in the air of the jar. The rats receiving methylene blue were labeled respectively a, b and c; the rats with saline solution were d, e and f. Failure of respiration was taken as the death point, although in each case the heart continued to beat for a short time. Rats a, b and c died in 26, 30 and 33 minutes, respectively. Rats d, e and f died in 25, 29 and 35 minutes, respectively. The total times for each group were identical, 89 minutes, or an individual average of 29 minutes and 40 seconds. The methylene blue did not prolong the time required for the carbon monoxide to kill.

The rats were removed from the jar and on each a determination was made of the percentage saturation of the blood with carbon monoxide. The tannic-pyrogallic acid method of Sayers and Yant [8] was used, which can be read colorimetrically to about 5 per cent. The blood of each rat, alike those with methylene blue and those without, showed between 80 and 85 per cent saturation. The rats receiving methylene blue did not show a higher degree of saturation than did the control rats. If methylene blue diminished the affinity of hemoglobin for carbon monoxide, this comparison would have demonstrated it. If it protected or aided the oxidative ferment of the tissues or in any other way acted as an antidote, the methylene blue rats would have outlived the others.

In the next experiment, ten rats of equal weight were placed under a bell jar and gassed as in the previous experiment. When almost at the point of death, they were all removed at once and five, chosen at random by a disinterested person, were injected with a methylene blue solution of 20 mg. per kilogram. The other five were injected with a similar volume of saline solu-

7. Geiger, J. C.: Methylene Blue Solutions in the Treatment of Carbon Monoxide Poisoning: Report of Cases, J. A. M. A. **100**: 1103 (April 8) 1933.

8. Sayers, R. R., and Yant, W. P.: The Tannic Acid Method for the Quantitative Determination of Carbon Monoxide in the Blood, Bureau of Mines Technical Paper 2356, May, 1922.

tion. The time required for recovery was then noted. Our choice of a criterion for recovery differed somewhat from that of Brooks, for we find that even normal rats in Connecticut do not without considerable urging "run straight forward." We placed all of the unconscious rats on their backs and used as the index of recovery the righting reaction when the animals of their own accord rolled over and assumed their normal posture. The times required for this degree of recovery in the rats treated with methylene blue were respectively 5, 5, 7, 8 and 8 minutes, a total of 33 minutes; for the rats receiving saline solution the times were 4, 5, 7, 7 and 8, a total of 31 minutes.

EXPERIMENTS ON DOGS

A second series of experiments was carried out with dogs as the experimental animals. Seven dogs were gassed with carbon monoxide to a point just short of respiratory failure. On removal from the atmosphere of carbon monoxide, a blood sample was drawn and the percentage saturation of the hemoglobin was determined by means of the Van Slyke blood gas analysis apparatus. Four of the dogs were at once given methylene blue, 10 mg. per kilogram, by intravenous injection. The remaining three dogs as controls were injected intravenously with a like volume of physiologic solution of sodium chloride. The animals were carefully watched, and as soon as each became sufficiently conscious to respond by moving when pinched on the legs, a second blood sample was drawn. A third blood sample was taken at the time the dogs were able to walk after being placed on their feet and urged to move.

Comparative Results on Dogs Treated with Methylene Blue and the Untreated Controls After Carbon Monoxide Asphyxia *

Animals Treated with Methylene Blue	Percentage Saturation with Carbon Monoxide			Percentage of Methemoglobin	Condition Next Day
	End of Gassing	Responsive to Pinch	Able to Walk		
Male, 12 Kg.	79	65	40	7	Trembling, ill and weak
Male, 12 Kg.	81	Died 7 minutes after injection			Dead
Female, 10 Kg.	78	28	14	12	Staggering and ill
Female, 10 Kg.	82	64	30	8	Very weak
Control Animals					
Female, 10 Kg.	82	72	48	0	Normal
Female, 14 Kg.	81	70	50	0	Normal
Male, 13 Kg.	80	68	46	0	Normal

* The animals receiving methylene blue were responsive to a pinch in 10, 8 and 9 minutes, respectively; the controls in 10, 12 and 8 minutes. Those treated could walk in 26, 24 and 31 minutes; the controls in 22, 27 and 20 minutes.

The percentage of the hemoglobin converted to methemoglobin in the second blood sample was determined by the method of Van Slyke and Hiller.[9] The results of these experiments are given in the accompanying table.

It will be seen from this table that the two groups of animals were gassed to almost exactly the same degree. In those which were then treated with methylene blue, marked hyperpnea occurred, and the amount of carbon monoxide in the blood decreased more rapidly than in the untreated controls. But this advantage was counterbalanced—indeed, more than counterbalanced—by the formation of methemoglobin and by other deleterious effects. The general condition of the treated animals from a quarter to half an hour after the gassing was not better than that of the untreated. In fact, one of those that received methylene blue died a few minutes later. At the time when the animals first responded to pinching of the legs, the carbon monoxide combined with hemoglobin averaged for the controls 70 per cent with no methemoglobin. For the dogs treated with methylene blue the response did not come until the carbon monoxide hemoglobin had fallen to an average of 52 per cent, with from 7 to 12 per cent methemoglobin. At the time when the animals were able to walk, the control dogs showed an average carbon monoxide hemoglobin of 48 per cent. Those treated with methylene blue showed an average of 28 per cent of carbon monoxide hemoglobin with presumably the same methemoglobin as before.

In other words, the control animals were sufficiently recovered from asphyxia to respond to a pinch with only 30 per cent of their hemoglobin free, and to walk with 52 per cent free for the transportation of oxygen. The treated animals were not recovered to these degrees until they had 39 and 63 per cent of their hemoglobin again in functionally useful form. The difference between these two pairs of figures indicates the accessory ill effects of methylene blue. In this respect methylene blue resembles such drugs as cyanide and lobeline.

Lobeline also was once advocated as a resuscitant but has now been generally discarded. There are many such drugs, all of which induce a temporary increase of respiration and thus promote the elimination of carbon monoxide. But no drug has yet been found, with the exception of carbon dioxide diluted in air or oxygen, that has not a greater effect as a poison than as a remedy in the treatment of asphyxia.

The most striking difference between the two groups of animals—the controls and those treated with methylene blue—was evident on the following day. At that time the control animals were active and appeared in every way normal. On the contrary, the dogs that had survived after injection of methylene blue were all ill; they appeared lethargic and their legs shook on standing.

CONCLUSIONS

There is no valid basis, theoretical, experimental or clinical, for the belief that methylene blue is an antidote for carbon monoxide asphyxia.

The chief effect of methylene blue is to convert some of the hemoglobin of the blood into methemoglobin. By thus further diminishing the oxygen carrying capacity of the blood, methylene blue acts as a synergist with carbon monoxide in promoting asphyxia. It probably exerts also other deleterious effects.

Experimental evidence is here presented showing that the administration of methylene blue in carbon monoxide asphyxia may induce fatalities that would not otherwise occur. Illness attributable to the effects of methylene blue persists after recovery from carbon monoxide asphyxia.

These conclusions reinforce previous evidence that hypodermic and intravenous medication is more likely to be injurious than remedial in the treatment of carbon monoxide asphyxia.[10]

4 Hillhouse Avenue.

9. Van Slyke, D. D., and Hiller, A. E., quoted by Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry, Baltimore **2**: 349, 1932.

10. Henderson, Yandell: Resuscitation, J. A. M. A. **82**: 758 (Sept. 6) 1924.

PROGRESS IN THE DIAGNOSIS OF TUBERCULOSIS

WITH SPECIAL REFERENCE TO THE X-RAYS

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During the past five years, progress in tuberculosis has advanced very rapidly. Apparently, it has been a golden age as far as practical diagnostic, therapeutic and preventive work is concerned. Advances are being made in so many places that it is becoming difficult for one to keep informed on even the major activities. While reading an article on tuberculosis, published about 1917, I was impressed with the quite recent origin of several present well established facts. The contrast was as apparent as that between an article on malaria fever published in 1824 and one published in 1932.

In the first half of the last decade the foundation was laid, and during the second half the superstructure was being built. Controversy and debate have been replaced, for the most part, by work, which is resulting in actual accomplishment. There are still a few so-called controversial questions, such as: 1. Is the reinfection which causes illness more often of exogenous or of endogenous origin? 2. Is the first infection which results in a positive tuberculin reaction an asset or a liability to the individual? 3. Is the positive tuberculin reaction a manifestation of allergy or of immunity? 4. Is it possible to produce immunity in the absence of allergy? The new view on some of these questions is contrary to that which many workers were taught as students, which they have taught themselves, and which they still believe. Doubtless, some of these questions will continue to be controversial; that is, every time the members representing the new and the old schools come together, debates will ensue. Such debates stimulate thinking; thinking leads to investigation, not only on the part of the debaters but also on the part of their audience. When such debates are over, there is no reason for the existence of personal enmity and malice but every reason why all concerned should go forth seeking every available bit of evidence and producing new evidence. The truth is, most of the remaining points of controversy are not of any great significance in the actual tuberculosis work.

Most workers are agreed on the major factors in prevention, treatment and diagnosis. For example, the ardent advocates for universal infection with tubercle bacilli in infancy and childhood have come to believe that it is now wiser to postpone the first infection with tubercle bacilli, whether of human or of bovine type, just as long as possible. In short, the protection of the body from exposure to tubercle bacilli, with the hope that many will live out the span of life without contamination with tubercle bacilli, is the more desirable course. Some are now in a quandary as to whether an avirulent strain of tubercle bacilli, such as B C G, should be introduced into human bodies with the hope of producing immunity. This group, at least in America, apparently is very small. It appears that the vast majority of workers prefer to protect against exposure rather than resort to a method of immunization that has been so seriously questioned.

Read in part before the Gibson County Medical Society, Trenton, Tenn., March 27, 1933, the Chicago Tuberculosis Institute, March 28, 1933, the St. Joseph County Medical Society, South Bend, Ind., March 29, 1933, and the Peoria City Medical Society, Peoria, Ill., April 18, 1933.

A decade ago, any one who ventured to discuss the tuberculin test from the point of view of its value in diagnosis beyond the period of infancy and early childhood was looked on by many physicians as an unpractical enthusiast. Such a physician could rarely find enough persons who agreed with him to debate with members of the opposing school. Some of the profession even tried to discourage veterinarians, who had a vision of tuberculosis control among animals, by discrediting the tuberculin test and stating that eradication of the disease among animals was a physical impossibility. Today, tuberculin is looked on as the most accurate diagnostic agent we possess, both in human and in animal medicine, and the school of physicians that formerly insisted on its lack of practical value has undergone almost total dissolution. For those who have actually used the test extensively, among either human beings or animals, no further evidence is necessary to convince them of its practical value in diagnosis. Most of this change in the point of view has come about during the past five years.

About ten years ago a person who was performing artificial pneumothorax in any considerable number of cases was looked on by many physicians as a dangerous and radical practitioner. To institute artificial pneumothorax when a diagnosis of tuberculosis was first made, regardless of the stage of the disease, was considered almost malpractice. Most physicians believed that such treatment was very drastic and that it should be employed only as a last resort and that no patient should have such treatment instituted until he had been given bed rest for from three to six months or more in the hope that nature would bring the disease under control. Today it is not uncommon for a patient to have his first examination and, if frank pulmonary tuberculosis is detected and the case is suitable for artificial pneumothorax, to have that treatment instituted the same day. To advocate the use of artificial pneumothorax in minimal but progressive tuberculous lesions is no longer looked on as sacrilege. Even to treat carefully selected cases of pulmonary tuberculosis by artificial pneumothorax alone has been found adequate by a number of physicians who have instituted this practice. Such rapid advance in knowledge has taken place during the past five years that today this form of collapse therapy is looked on as a standard method of treatment. Therefore, the large school of physicians who formerly bitterly opposed collapse therapy no longer exists.

About 1920 there was considerable debate as to the value of roentgenograms in the diagnosis of tuberculosis. A school of physicians of considerable size strenuously opposed its use on the ground that physical examination was sufficient. This group has been reduced to a mere handful. The manufacturers of films and other x-ray equipment have done such marvelous work that the finished x-ray film of today is far superior to that of a decade ago. However, much remains to be done before the film becomes a fine screen in diagnosis; nevertheless, it is already sufficiently good that those engaged in practical diagnostic and follow-up work of chest lesions need no further evidence concerning its great value.

What has happened to the physicians who formerly so strenuously opposed the new views concerning diagnosis, treatment and prevention of tuberculosis? They were not executed; they were not driven out of medicine; nor by any means have all of them died. The vast majority of them were working in the light of the

best knowledge of their time. They were clinging to the teachings of their alma maters, but all the time their minds were open. Nevertheless, they demanded evidence and, as such evidence accrued, one by one they joined the opposing school until today physicians are very much in agreement on the major factors of the diagnosis, treatment and prevention of tuberculosis.

There is very little likelihood that the profession will remain where it is. Perfection is still a long way off and, as the necessities are recognized, a solution will be found. A notable example is the field of tuberculosis surveys. That the tuberculin test is the finest screen for detecting the persons of a community who have foci of tuberculosis in their bodies is no longer doubted, but the tuberculin test is only part of an examination; that the roentgenogram of the chest of positive tuberculin reactors is another part of every satisfactory examination, almost every one admits. The tuberculin test can be administered quickly and cheaply. Therefore, it has been quite extensively used. The previous method of making roentgenograms was a slow one and involved considerable expense. To make films of the chests of large numbers of university students, school children, industrial groups and the like with present equipment has been so slow that often weeks and months elapse after the work is begun before the last chest film is made. If frank tuberculosis is present in the chests of individuals last examined, it has had an opportunity to spread, and the bacilli may have been disseminated to many associates. Thus, the demand has arisen for a rapid method of making roentgenograms of the chest. An attempt to meet this demand was made by the Queensboro Tuberculosis and Health Association and the Powers Photo Engraving Company. To one who has seen the work of these organizations almost in its beginning, 1931, and followed it subsequently, it is most striking how in such a short time the demand for a rapid method of making x-ray films of the chest could be met so well.

The first problem was to produce a film that required as little handling as possible. The result was x-ray paper films in rolls, each roll large enough for 100 or more exposures. The next need was to make many exposures in a short time. This was met by the use of special attachments to the x-ray equipment, some of which were automatic, and a water-cooled x-ray tube. Already a device is in use which easily makes 150 exposures an hour. This rate can be maintained for five or six hours a day with two operators and for eight or ten hours a day with three operators. Under pressure of time, as many as four exposures have been made in a minute. The roll of film is developed intact, after which it is quickly dried. The developed roll is then placed in a special device, where in a short time all the pictures can be viewed.

Paper x-ray films have been produced several times in the past. In fact, the subject of paper films in chest radiography has been favorably [1] and unfavorably discussed. [2] However, in neither did the new film recently produced in New York come under consideration. Apparently, this new film is definitely superior to any previously manufactured.

Some questions naturally arise, such as What are the advantages and disadvantages of these films from the standpoint of diagnosis and the like? Where have they been used? and What has been the result? Barnard, Amberson and Loew [3] made exposures first on celluloid film, then on the new paper film in 1,000 cases. They then made a comparative study of the two methods. They say:

> Paper films used by us do not produce chest roentgenograms of quite the same clearness as do celluloid films. The difference, however, is not sufficient greatly to impair the value of the paper film for practical diagnostic purposes. In the interest of public health, the slight diagnostic error would be much more than offset by the possibility of examining larger groups of people by this method. In view of the smaller expense, we therefore believe that the paper film may be advantageously used for chest roentgenograms of large groups of school children or other persons, provided those with doubtful shadows are again x-rayed with a celluloid film. The paper film may also be found useful for other purposes by some workers according to their peculiar needs.

From personal observation, I am firmly convinced that the paper film is of value not only in diagnostic work but also in making serial x-ray records of lesions after they have been detected. Such records have become necessary in studying the effect of treatment on pulmonary lesions. In cases on collapse therapy, particularly pneumothorax and phrenic exeresis, the paper film records the extent of collapse and like conditions excellently. I am told by those engaged in other phases of medicine, such as orthopedics, that the paper film in its present stage of development is adequate for a considerable part of their x-ray work. Other advantages cited are that the paper film burns more slowly than uncoated paper and gives off no noxious fumes when burning and that data concerning the patient may be written on the front or back of the developed film.

Paper film in rolls has been used in making exposures of chests of about 11,000 school children in Queensboro (these children are to be reexamined by x-rays every year for about four years), the entering class of the Bellevue Medical College (1932), 6,000 high school and junior high school students in New Haven, Conn., and about 11,000 children and adults in the Harlem district of New York. In addition to the rapid camera work, paper films for ordinary single and stereoscopic roentgenograms are now in use in several states, including Illinois, Indiana, New Jersey, Montana, Virginia, Alabama, Ohio, Minnesota and Massachusetts. The cost of the paper film is approximately half that of the ordinary film, so that when the rapid method is used, which necessitates so little handling of film, the cost of the finished product is markedly reduced.

There is one danger against which the medical profession must guard; it is that this rapid method of making x-ray films and the necessary equipment may get into the hands of those who are overenthusiastic and unqualified, as heliotherapy did. The manufacturers are anxious to prevent this and are ready to cooperate fully with the medical profession. Although the paper film is not all that one desires, it is still very much worth while. No one has claimed that it is superior to the modern transparent film in clarity. However, it is highly satisfactory when properly used in case-finding work. Moreover, from the standpoint of clarity, the paper film of today is superior to the

1. Paper Films in Chest Radiography, Lancet **2**: 247 (July 30) 1932.
2. Deutschen Rontgengesellschaft, Fortschr. a. d. Geb. d. Röntgenstrahlen **46**: 608, 1932.
3. Barnard, Margaret W.; Amberson, J. B., Jr., and Loew, M. F.: The Technic of Using Paper Films for Roentgenograms of the Chest, Am. Rev. Tuberc. **25**: 752 (June) 1932. Amberson, J. B., Jr.; Barnard, Margaret W., and Loew, M. F.: Comparative Value of Paper and Celluloid Films for Roentgenograms of the Chest, Transactions of the Twenty-Eighth Annual Meeting of the National Tuberculosis Association, 1932. Barnard, Margaret W.: The Adaptability of Paper Roll Film in Roentgenography, Quarterly Bulletin of the Milbank Memorial Fund **10**, April, 1932.

celluloid film of a few years ago. The manufacturers have definitely improved the paper film from time to time and are of the opinion that it will be further improved in the near future. The first consideration of the entire medical profession is the control of disease; hence such an advancement as the rapid method of exposing and developing x-ray films and the manufacture of the paper film should be accepted with alacrity. Here is a method which will make possible the use of that very valuable diagnostic aid the x-ray film for large groups of people who would otherwise be denied it. Wherever a survey is to be made, it should be not only with the consent but under the direction of the local medical society. This will insure the keeping of the survey on a sound foundation, so the tuberculin tests and x-ray films will be properly interpreted, and those found to have evidence of disease can be referred to their family physicians for any necessary treatment.

The following statements by Dr. John L. Rice,[4] health officer of New Haven, Conn., confirm some of these statements and illustrate its use:

> During the month of November [1932] the New Haven Department of Health and the Board of Education undertook a special piece of tuberculosis prevention work among school children. Within a period of eleven school days, 6,400 children of high school and upper grade age had chest x-ray pictures taken. The pictures of all pupils except ninety were paid for by the respective parents. Recently, a new method of obtaining x-ray pictures has been devised and its value demonstrated. In this new method the pictures are taken on paper instead of celluloid. The paper films are utilized in rolls and the portable x-ray apparatus so regulated that pictures can be taken at the rate of three to four a minute. The films are developed in rolls of a hundred or more exposures and interpreted under reflected light by merely unrolling the long sheets on an appropriate apparatus.
>
> This large group of x-ray pictures is now being studied by Dr. Edwards. The pictures will eventually be returned to the pupils after the information of value has been put in the hands of the family physicians. Many physicians and x-ray men have seen these pictures and there is surprise and enthusiasm at the uniformity, clarity and detail presented. It will be some time before all of the pictures are studied and interpreted, but the first 700 high school students studied, and perhaps the best group physically, show 9.1 per cent of suspicious or manifest disease as follows: suspicious, 5.5 per cent; childhood type, 3.2 per cent, and adult type, 0.4 per cent.
>
> This work will make it possible to pick out the children who have had enough infection to have produced a variable amount of disease which can be seen in a picture. It will also provide an opening to follow into homes and perhaps discover unrecognized sources of infection.

In any such survey, the medical profession must be extremely careful that the public is informed that the low cost is solely for survey work, since it does not include interpretation of the film. The charge for roentgen examinations in the private practice of medicine has never been based on the cost of materials but rather, as it should be, on the professional knowledge required to interpret the shadows. Any one can look at an x-ray film, but to be able to interpret it properly requires long years of training. When a physician is called to the home of a sick person, his fee for such consultation is not based on the instruments and materials used, for they may consist only of a stethoscope, but his special senses have, through years of training, been so developed that through them he is able to elicit evidence which is most apt to lead to an accurate diagnosis. Again, his years of training in therapy lead to advocacy of such therapeutic measures as will result in the best chances of recovery for the patient. In prescribing the treatment, perhaps all he uses is a pen and a prescription blank. His fee is based on his ability to diagnose and treat the disease, rather than on actual materials used. The same situation obtains in the interpretation of an x-ray film. With survey work the cost to date for x-ray films has included practically nothing but material. The interpretation of the films has for the most part been an act of charity on the part of physicians. In private practice the difference between the cost of paper and celluloid films is an insignificant part of the charge to each individual patient, but, if a medical society cooperating with a tuberculosis society with limited funds desires to make films of the chests of 100,000 persons who otherwise would not have x-ray film work done, the difference in cost of materials alone would be approximately $30,000.

Tuberculosis surveys often bring to light some very definite but unsuspected cases of tuberculosis. Such results prove to the public the great value—in fact, the necessity—of the x-ray film as a part of an examination. This new x-ray development is another advantage that our predecessors lacked.

4. Rice, J. L.: X-Raying Over 6,000 School Children in New Haven, Health Officers' World 1:9 (Jan.) 1933.

SUMMARY

Although there are still a few controversial subjects in the field of tuberculosis, they are of minor significance. Ten years of careful observation and study has resulted in complete reversal of the views in the major factors of this work, such as the tuberculin test and the roentgen examination.

Transparent x-ray films now in general use have been greatly improved in the past decade but still are not all that could be desired.

The present equipment for making x-ray films is too slow in operation for the increased demands for greater numbers of x-ray examinations. The new rapid x-ray camera meets the demand by making with ease from 500 to 1,000 exposures a day.

The new paper x-ray film in rolls has reduced the cost of films by about one half.

No one has claimed that the paper film yet reveals the same detail as the transparent film, but the difference in clarity is slight. Conservative observers with much experience have estimated it to be not more than 10 per cent.

The new paper film, at least in its present state of development, will not displace the transparent film for certain types of work. Those who have accomplished so much by way of refining the transparent film should be encouraged to continue their efforts to improve it, with the hope that eventually it will reveal much more detail than it does at present.

The new paper x-ray film should not affect the cost of x-ray work in private practice, since the major part of the charge made the patient in the past has been based on the physician's ability to interpret the shadows.

The medical profession should support this rapid and much cheaper method of making roentgen examinations, since it has real merit and since it makes roentgen examinations possible for large numbers of persons who otherwise would not have them. By so doing, it will be kept out of the hands of unqualified individuals and organizations, yet it will be fully utilized within the limits of medical science.

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Clinical Notes, Suggestions and New Instruments

ASPERGILLOSIS: A CASE OF POSTOPERATIVE SKIN INFECTION

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Since our student days we have been familiar with the fact that molds may at times be pathogenic in their action. Attention had been called to this pathogenicity even before Virchow's work in 1856 describing the infectious process and identifying the organism. Baumgarten in his "Mykologie," published in 1890, describes the lesions resulting from experimental injections of Aspergillus niger and discusses very fully the pathologic changes and the microscopic observations.

Myers and Dunn[1] reported a case of aspergillosis in which the infection was located on the dorsal aspect of the hand of a farmer. The lesion was in the nature of a granuloma.

Most often this infection is seen in the auditory canal and in the lungs. In the lung it may run a very chronic course and defy accurate diagnosis for a long time. In the auditory canal it is a question whether the mold acts as a true pathogenic organism or is present as an epiphyte. In the lung, however, it is truly parasitic or pathogenic in character.

Recently our attention has been called to a postoperative dermatosis due to Aspergillus and, having seen two previous cases, we have thought the matter of sufficient interest to record; also, we have noted no similar postoperative skin infections reported in the literature.

A woman, aged 40, was operated on for abdominal tumor, the operation being devoid of any feature worthy of comment. The usual preoperative local preparations were made and the usual dressings applied. At the end of about sixteen days, the dressings were removed and revealed what has been observed on two other occasions; namely, the dressing had the appearance of being studded with black powder, and at one end of the wound, near the site of one of the lower stay sutures, there was a spot that had the appearance of a large ulcer, about 1½ inches (3.7 cm.) in diameter, with sharply defined edges, slightly elevated and filled with a yellowish-black material resembling pus. In addition, at various points in the skin under the gauze dressings covering the wound were pustules varying in size from one-sixth to one-fourth or three-eighths inch in diameter. They were elevated, contained a purulent looking material varying in color from yellowish, in the smaller, to almost black in the larger pustules. They were quite superficial and did not penetrate through the true skin except for the large ulcer-like area at the stay suture, which showed the black discoloration not only over its entire base but also in the depths of the suture tract. The edges of all were sharply defined with the slightest margin, possibly a line in thickness, of redness circumscribing the pustule. As stated, the infection did not extend beyond the gauze pad used as dressing and was definitely confined to this area. As a result of this observation, it was at once recognized that we had encountered an implantation of a species of mold fungus, most likely Aspergillus niger. There was no postoperative elevation of temperature nor any other untoward symptoms. Following exposure of the wound field to air and washing with iodine and alcohol, the apparent ulcers and pustules had entirely disappeared by the next morning, leaving dry, slightly scaly, areas outlined by a faint red line to show where they had been.

The history and the appearance is characteristic of three cases observed. The first was seen thirty years ago and the second about twelve years ago, each of them exhibiting similar pustulation confined absolutely to the area of the gauze dressing and healing rapidly after exposure and painting with 3 per cent tincture of iodine followed by alcohol and dressing applied so as not to exclude air. A photograph of the second case, which followed an emergency appendectomy, failed to show the details sufficiently to warrant publication.

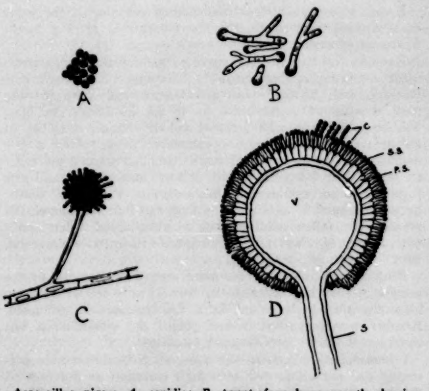
From the Department of Surgery, Norton Memorial Infirmary.

1. Myers, J. T., and Dunn, A. D.: Aspergillus Infection of the Hand, J. A. M. A. 95: 794 (Sept. 13) 1930.

At first the inclination was to construe the aspergillus found in these cases as truly pathogenic in character, but after consideration one may come to the conclusion that this is not true and that the condition can be called an infection only in the broadest use of the term. The explanation may be that following the preparation of the patient's skin there is in the operating room atmospheric contamination by this organism. It is sealed up by the dressing, skin reaction ensues, blebs are formed under the adhesive plaster or any other dressing that may be used, and the serum in these blebs furnishes a most desirable pabulum for the growth, or there may be a bit of oozing from a stay suture stitch hole or from the lips of the wound, and such would act as an excellent culture medium.

Culture of other packages of dressings put up at the same time as those used in this case proved absolutely sterile, nor was there any evidence of any skin infection in any other clean case in which operation was performed the same day or on previous or subsequent days.

Of the 375 species of Aspergillus, 57 are pathogenic, and 40 are pathogenic for man. The majority of pathogenic species have been found in the ear. These organisms have also been found in the lungs, bronchi and throat, about the nails, in an ulcerated cornea, and in the feces. The organisms were isolated from the beards of two Africans by Castellani.



Aspergillus niger: *A*, conidia; *B*, twenty-four hour growth showing young mycelium; *C*, mature organism; *D*, cross-section of conidiophore (*c*, chains of conidia; *ps*, primary sterigmata; *ss*, secondary sterigmata; *s*, stalk; *v*, vesicle).

The specimen sent to the laboratory consisted of the surgical dressings covered with a dark powder. This powder was planted on Sabouraud's maltose agar and potato. A rich growth was obtained on the agar in twenty-four hours and on the potato in seventy-two hours. Spores were then planted in Sabouraud's maltose agar between a coverslip and slide and the growth was followed under the microscope from a single spore to maturity. This microscopic slide culture method has been invaluable to us in the study of fungi.

The organism has been identified as one of the strains of Aspergillus niger but differs somewhat from any of the strains already described, as will be seen from the drawings. The characteristics of these organisms are as follows: colonies growing rapidly and becoming very black on the surface after several days; with abundant submerged mycelium; mycelium colorless; aerial hyphae scantily produced; globose, superficial conidia; stalks mostly arising directly from the substratum, some uncolored and some yellow to brown only near the vesicle, smooth, with walls thick and without pits but frequently uneven on the inner surface. The mycelium is septate, each hypha having a distinct nucleus. The vesicle is globose, thick walled and a yellow brown. The sterigmata are both primary and secondary.

Large numbers of calcium oxalate crystals were found in Sabouraud's maltose agar near the growing organisms. The disaccharide maltose is hydrolyzed by the enzyme maltase produced by this aspergillus and is broken down into two molecules of the monosaccharide dextrose:

$$C_{12}H_{22}O_{11} + H_2O = 2C_6H_{12}O_6$$

Citric acid is then fermented from the dextrose as an intermediate product:

$$C_6H_{12}O_6 \qquad C_6H_8O_7 + 2H_2O$$

This reaction is not fully understood. Buchanan thinks that possibly the acid is synthesized from some of the decomposition products of the sugar.

Oxalic acid is formed from the citric acid. When the acid formed is neutralized by the addition of chalk, one half of the calculated theoretical yield is obtained.

This is an interesting phenomenon. The finding of large numbers of calcium oxalate crystals in the mediums may give one an immediate lead as to the type of organisms present.

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REPORT OF CASES OF CARBON MONOXIDE POISONING TREATED BY METHYLENE BLUE INJECTION

A. W. CHRISTOPHERSON, M.D., HERMISTON, ORE.

I wish to report further confirmative evidence of the value of methylene blue (methylthionine chloride U. S. P.) in the treatment of carbon monoxide poisoning.

Recently five men were brought to me for emergency treatment following a "mysterious" poisoning. They had been working with a road construction crew and were blasting rock in a tunnel measuring 6 by 10 by 115 feet. The blast was set at the depth of the tunnel and ten minutes later two of the men entered the tunnel to commence work. After a few moments one of them sensed the danger and warned the other to run. The latter collapsed almost immediately and the former ran but collapsed at the mouth of the tunnel, where he was dragged to safety. One man ran into the tunnel and rescued the fallen man, but he also collapsed when safely within reach of others. These three were rushed to the hospital, where I attended them.

Within thirty minutes two more men were brought to the hospital. One had entered the tunnel with an air hose to blow the tunnel clean and in a few minutes he collapsed. Another witness rushed in and placed the victim on a belt conveyor and both were brought to safety.

I immediately diagnosed the cases as carbon monoxide poisoning and put all to bed with high elevation of the foot of the bed, external heat, and pure oxygen inhalation. Three required caffeine sodiobenzoate and two, atropine sulphate for cardiac and respiratory stimulation.

Two of the men were profoundly comatose and required artificial respiration, as their voluntary respirations varied from three to five per minute. Their pulses were weak, rapid and irregular. Their color varied; the younger man, about 28 years of age and robust, was flushed pink from head to foot; the other, a man of 55 who had dissipated heavily, was cyanotic and in convulsions.

An attempt was made immediately to obtain ready prepared methylene blue, 1 per cent, for intravenous injection, but as it was not available, a solution was prepared locally. An hour had elapsed when the solution was ready and as the two severely affected patients appeared unimproved, they were both given 50 cc. of the solution. Before the injection was completed, they became conscious and talked rationally. Both made rapid, uneventful recoveries and, while more cautiously handled, seemed to have recuperated sooner than the three remaining patients.

The remaining cases responded promptly to the oxygen and the dye was not used. One of these patients later had the stormiest recovery of the lot and is the only one remaining under my care at this time, having a local systolic murmur over the heart apex, which may or may not be organic.

It would appear that the methylene blue had a remarkably specific action in these cases of carbon monoxide poisoning.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH, Secretary.

NAÏODINE NOT ACCEPTABLE FOR N. N. R.

"Naïodine" is a product of the Emile Logeais Laboratories of Boulogne sur Seine, France, distributed in the United States by E. Fougera and Company. It is proposed for subcutaneous intramuscular or intravenous injection for the relief of pain from whatever cause.

The advertising material for Naïodine, widely promoted to the medical profession, is pernicious. Rarely today can one read claims of therapeutic usefulness more imaginative in conception or less supported by fact.

Naïodine is claimed to be a "one per cent solution of hyperactive sodium iodide (NaI) . . . stabilized by a special process, exclusive of any other active principle, toxic or otherwise."

There is no chemical method known to the Council whereby a simple, highly ionizable salt like sodium iodide can be rendered "hyperactive," whatever that may mean. The implication in the advertising circulars that this iodide preparation is of a special order of therapeutic effectiveness is highly improbable. It is well known that the addition of small amounts of alkali, preservation in hard glass, and protection from light may tend to prevent the decomposition of iodide solutions.

The following are some of the claims made for this preparation:

"NAÏODINE is indicated for the relief of pain, and distress, *whatever the organ affected, whatever the site of pain, and whatever the nature of the pain or distress present, whether it be due to neuralgia, neuritis, spasm, inflammation, sympathetic pain, anguish or anxiety* [Italics ours].

"NAÏODINE is as powerfully effective against the anguish accompanying the withdrawal treatment in cases of toxicomania as it is against the so called 'essential' sciatica, the crises of asthma, sinusalgia, the tarsalgia affecting adolescents, uterine or ovarian pain in dysmenorrheal patients, pain present in advanced cancer, myalgia, rheumatic or rheumatoid pain and the like.

"In brief, NAÏODINE constitutes a type of sedative preparation, a faithful antispasmodic, and an antalgic. It may be added that the injection of NAÏODINE is painless."

"The sodium iodide present in NAÏODINE, when introduced parenterally, possesses a veritable neuronotropic effect. When absorbed by the capillaries, it progressively impregnates the nerve centers, somewhat as bromides impregnate them, diminishes and suppresses promptly their sensitiveness to pain . . . large doses must be employed from the very first, and must be repeated without hesitation. There is no reason whatever for hesitating, since Naïodine is atoxic and since it produces no modification whatever of the respiratory or circulatory centers . . ."

"Injectable NAÏODINE permits atoxic treatment of all algic states. *It replaces morphin and other analgesics, all of which are toxic . . . Naïodine is Atoxic and Painless.* Any dosage may be injected, without the least difficulty. It has no contra-indications."

"Use and dosage: The Treatment of Attack, by massive doses: 20 to 30 cc. daily, given in one or several injections. Maintaining Treatment, with diminishing dosage: 10 to 5 cc. daily." "Injections . . . in any muscular mass, deep subcutaneous, or intravenous."

Naïodine is further recommended for "sciaticas, lumbagos, shingles, trigeminal neuralgias, syphilitic and rheumatismal iritis . . . dyspnea, angina pectoris, asthma, pulmonary emphysema, toxicomanias . . . phlegmons, burns, acute arthritis, painful chronic arthritis, acute otitis, etc."

A brochure also is distributed, composed about a photograph of a woman's head in marble reproduction; at the bottom appears "Naïodine—cure atoxique"; in one margin, "ne plus souffrir," repeated several times in type of diminishing size.

Naïodine is claimed to be absolutely atoxic; nowhere is there mention of the possibility of iodism, of anaphylactoid reactions from intravenous injection, or of the possibility of inducing serious or even fatal pulmonary edema in susceptible individuals, particularly in the pathologic pulmonary conditions for which Naïodine is recommended. The routine use of injections of sodium iodide to replace "morphine and other analgesics" as

advised in the advertising should be vigorously condemned. The advisability of parenteral administration of iodides in general is open to serious question, as these salts are readily absorbed from the intestinal tract. To the Council's knowledge, it has not been demonstrated that oral administration of *adequate dosage* is inferior to parenteral injection in producing all the known iodide effects (with the exception of the anaphylactoid response to intravenous injection). The claim for a "neuronotropic" effect of sodium iodide gives the impression of pure confabulation; it is well known that administered iodide is not retained in appreciable quantities in nerve tissue.

The Council declared Naïodine unacceptable for inclusion in New and Nonofficial Remedies, because it is an unscientific preparation of uncertain composition (rules 1, 2 and 10), for which unwarranted and fantastic therapeutic claims are made (rule 6); and because it is marketed under an objectionable proprietary name (rule 8).

VI-CRIS NOT ACCEPTABLE FOR N. N. R.

Vi-Cris is the uninforming proprietary name under which Vi-Cris, Inc., Detroit, markets a mixture proposed for use as an antiseptic on mucous or skin surfaces and stated to consist of 1 per cent each of gentian violet (later qualified as Crystal Violet 6BN) and Brilliant Green dissolved in a mixture of grain alcohol 35 per cent and water 65 per cent. The specifications for the composition of crystal violet 6BN as furnished by the manufacturers indicate the insoluble matter as 1.98 per cent and the ash as 4.68 per cent. Both of these values exceed the maximum permitted for gentian violet medicinal-N. N. R. (1 per cent in each case). No statement of composition appears on the carton, on the label or in the advertising.

The proprietary name Vi-Cris cannot be recognized, since this preparation is a mixture of two well known dyes and in no respect presents a distinct improvement over similar preparations in use.

No data are furnished in support of the firm's claim of "Powerful Antiseptic Properties" for Vi-Cris except several unsupported quotations attributed to several unnamed dentists in an advertising circular, and a report from "National Pathological Laboratories, Inc.," of Detroit. This report purports to give the results of a comparison of the bactericidal properties of mercurochrome, acriflavine, picric acid, iodine and Vi-Cris. The concentrations of only two of these substances are furnished, "sat. sol." for picric acid, and, in the "twenty-four hour" test, 2 per cent for mercurochrome. The method employed is not stated. The organism used is said to have been Staphylococcus aureus and not the standard typhoid bacillus. Phenol coefficients are not expressed. This report is therefore meaningless; no satisfactory evidence of therapeutic usefulness is available to the referee.

The advertising material is objectionable. Two circulars and one carton submitted reveal the following: "During a recent epidemic of IMPETIGO, Vi-Cris was the most successful antiseptic application." Vi-Cris is further claimed to be of value in erysipelas, infections of the lips and face (which it is stated "spread rapidly" and "may reach the brain"), carbuncles, epidermophyton (for which it is said to be "cooling, soothing, penetrating"), endocervicitis, pus appendix, mouth and throat infections, cellulitis, chronic suppurating wounds and sinuses, Vincent's infection, pyorrhea alveolaris, and other conditions. It is stated that "Vi-Cris is superior to any single dye used alone"; also that it is "First Choice" in either the medical or dental field of antisepsis.

On the carton Vi-Cris is said to be "A Perfect Family Antiseptic" (no less), to be good for, among other things, "Burns," "Insect Bite" and "Deep Seated Inflammations": "It soothes inflamed tissues and advances healing."

These unsupported, all-encompassing claims require no further comment.

This mixture is similar to one which has already been considered by the Council, namely "Acriviolet" (J. A. M. A. 98:480 (Feb. 6), 1932). Quotation is made from the Council's report on this preparation, which is also applicable in the case of Vi-Cris: " . . . there is no critical evidence of any superiority of this mixture over gentian violet alone." The implication of superiority is therefore not warranted.

The Council declared Vi-Cris unacceptable for New and Nonofficial Remedies because it is a mixture of unscientific composition, undeclared on the label or in the advertising (rules 1, 2 and 10); because it is marketed under an uninforming, proprietary name (rule 8) with exaggerated and unwarranted claims (rule 6).

The foregoing statement of the Council's consideration of Vi-Cris was submitted to the firm, Dec. 28, 1932. Mr. N. McKinstrie, president of the firm, replied (Feb. 11, 1933) that the firm had undertaken the manufacture of Vi-Cris at the instigation of physicians who had found the use of this combination of dyes advantageous. The solution is said to have been in use for ten years, having been brought to this country by Dr. W. L. Hackett, who obtained the formula from Dr. Victor Bonney of Middlesex Hospital, London. Notwithstanding the criticisms of the Council, the firm expressed itself as still believing that "this solution is one of the greatest bactericides" and as being anxious and willing to market it in a strictly ethical manner. The firm asked the Council for assistance in selecting a suitable name and expressed a willingness to market the preparation in a plain bottle and carton with name and chemical formula only. The firm stated "There is a demand, we are going to meet this demand, and there is no reason why we cannot do so ethically and with your approval."

A letter from Dr. Hackett (Feb. 8, 1933) recites his experience with this preparation in Dr. Bonney's clinic and states that in his experience "the solution has been the most satisfactory bactericide in my possession." A copy of a letter from Dr. Bonney dated Jan. 12, 1933, to Dr. Hackett, forwarded to the Council's referee, recounts Dr. Bonney's continued satisfaction in the solution as an antiseptic. Dr. Hackett kindly loaned the Council's referee, through the secretary, a copy of the 1920 edition of "A Textbook of Gynecological Surgery" by C. Berkeley and Victor Bonney, in which on page 35 this solution and its uses are described. The referee has not located an article on this preparation said to have appeared in the *British Medical Journal*, May 15, 1915. That article is said by Dr. Bonney to contain the suggestion on which this preparation was developed. Neither the "Textbook" nor any of these letters presents any data of controlled experiments. It is well known that both crystal violet and brilliant green are bacteriostatic for certain bacteria under certain conditions. It is known also that dentists and others make use of these dyes, singly or in combination, for antiseptic purposes. A letter from the secretary of the Council on Dental Therapeutics of the American Dental Association reports that a similar preparation is "in somewhat common use among dentists."

It is obvious that Vi-Cris cannot be made acceptable at this time. The marketing of the dyes as dyes would not involve the Council if no claims were made for their antiseptic action.

In view of the previous action of the Council with respect to Acriviolet, and in view of the fact that no new evidence has been supplied to establish the claims made for Vi-Cris, the Council voted to confirm its earlier decision that Vi-Cris is unacceptable for inclusion in New and Nonofficial Remedies.

TYRAMINE-ROCHE OMITTED FROM N. N. R.

Tyramine-Roche, a product of Hoffmann-LaRoche, Inc., Nutley, N. J., was accepted in 1917 as a brand of tyramine hydrochloride-N. N. R., and has been reaccepted at the close of each acceptance period up to the close of 1932. At that time the Council's referee, in considering its eligibility for continued inclusion in New and Nonofficial Remedies, reported to the Council his conviction that the drug has not fulfilled the promise of usefulness under which it was accepted and has become of little or no therapeutic importance. The referee pointed out that the firm, for some years, has not submitted advertising for the product and is apparently making no effort to promote its sale.

The Council concurred with the referee's opinion concerning Tyramine-Roche and voted to omit it from New and Nonofficial Remedies.

Committee on Foods

GENERAL COMMITTEE DECISION

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISION ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING.

RAYMOND HERTWIG, Secretary.

GOOD FOOD ADVERTISING

Food advertising must be considered from the points of view of both the public and the food merchandiser. Sound advertising effectively serves the interests of both. The continued welfare of the food industry rests largely on the dedication of its advertising activities to the good of the public. It is essential, therefore, to define proper food advertising.

Proper food advertising should use the common name of the food concerned or, in the case of a fanciful trade name, should identify the ingredients in the order of their decreasing proportions in the product. Such practice prevents deception. Any statement of the physical, chemical, nutritional or physiologic properties and values of the food should be truthful and expressed in simple common terms. Proper advertising is free from false implications. It does not create incorrect or improper inferences or comparisons between foods. It attempts to promote sales solely on the merits of the food article itself.

Good food advertising harmonizes with established authoritative knowledge popularly expressed. Meritorious foods require no exaggerated, false, misleading claims. The inferior food with alleged fictitious values requires gross superlatives and exaggerations, and flamboyant, vague and mysterious claims. Good advertising discusses nutritional values but avoids specific health claims; it recognizes that health depends on the diet as a whole and on many factors other than foods and not on any one food brand or any one type of food.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

BETTY JANE FLOUR (PHOSPHATE ADDED) (BLEACHED)
ROBIN'S BEST FLOUR (PHOSPHATE ADDED) (BLEACHED)

Manufacturer.—The Robinson Milling Company, Salina, Kan.

Description.—Hard winter wheat "standard patent" flours admixed with 0.5 per cent calcium acid phosphate; bleached.

Manufacture.—Hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with a mixture of benzoyl peroxide and calcium phosphate (one-half ounce per 196 pounds) and chlorine (three-fourths ounce per 196 pounds) and 0.5 per cent calcium acid phosphate is added.

Claims of Manufacturer.—"Phosphated" flours for biscuit baking.

BABY RUTH CANDY
BABY RUTH BUDDIES CANDY

Manufacturer.—The Curtiss Candy Company, Chicago.

Description.—Chocolate coated confection bars containing caramel dipped cores of fudge and roasted peanuts; prepared from peanuts, corn syrup, chocolate, sucrose, condensed skim milk, coconut butter, salt, egg albumin, vanillin and coumarin.

Manufacture.—The fudge center is prepared by boiling definite proportions of corn syrup, sucrose, skim milk, coconut butter, salt, egg albumin and flavor; it is pumped into starch molds, which are mechanically emptied, and the centers are dipped into caramel. The caramel covered fudge centers are mechanically covered with roasted peanuts, after which they are mechanically enrobed with sweetened chocolate. The bars are cooled and wrapped.

Analysis (submitted by manufacturer).—

	per cent
Moisture	3.1
Ash	1.2
Fat (acid hydrolysis method)	31.7
Protein (N × 6.25)	11.4
Reducing sugars as dextrose	5.6
Sucrose (copper reduction method)	34.8
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	51.8

Calories.—5.4 per gram; 153 per ounce.

S & H SLICED BREAD
SANITARY HOLSUM S & H BREAD

Manufacturer.—S & H Baking Company, El Dorado, Kan.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from flour, water, sucrose, sweetened condensed milk, lard, salt, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

MARTINELLI'S GOLD MEDAL SWEET PURE APPLE CIDER

Manufacturer.—S. Martinelli and Company, Watsonville, Calif.

Description.—Pasteurized sweet apple juice.

Manufacture.—Sound, clean hand-picked ripe apples (Newton Pippins, Bell-Flowers, Permains and Missouri Pippins blended) obtained direct from farmers and apple packing plants are used; from the packing plants the grade is known as cider or drier apples, which are without stems, with skin blemishes due to rubbing in the trees, birds or insects, with sunburn spots or handling bruises; apples too small for packing or drying are used also.

The apples are rolled past inspectors, who discard badly bruised fruit showing signs of mold or rot; they are washed in an alkaline or acid solution to remove any arsenical spray (U. S. Dept. Agr. Bull. 1687), and are ground to a pulp, which is built up to a height of several feet in layers between heavy cotton cloths and wooden racks. The juice is expressed by pressure. The cotton cloths retain the coarse pumace; the juice is pumped continuously through a filter of tightly stretched canvas on frames of acid-resisting bronze. A filter aid of infusorial earth is used to facilitate filtration. Metallic contamination is avoided by the use of acid-resisting bronze equipment. The filtered juice is automatically bottled and sealed. The process from pressing to filling is continuous; no heat is applied. The bottled juice is pasteurized at 73 C. for thirty minutes.

The sealed cider keeps indefinitely. No sugar or preservatives are added.

Analysis (submitted by manufacturer).—

	per cent
Moisture	82.3
Total solids	17.7
Ash	0.3
Fat (ether extract)	0.0
Protein (N × 6.25)	0.1
Reducing sugars as dextrose	11.9
Sucrose (copper reduction method)	2.3
Carbohydrates (by difference)	16.9
Titratable acidity as malic acid	0.4
	parts per million
Arsenic (As_2O_3) (individual samples)	0.34, 0.40, 0.36

Calories.—0.7 per gram; 20 per ounce.

Vitamins.—The method of manufacture is believed to be as highly protective of the natural vitamin values as are any cider manufacturing methods now in use. The pressing, filtration, bottling and pasteurization processes are continuous; only a short time elapses between the pressing of the pulp, and the bottling of the juice. The cider is not heated in the open but is pasteurized in hermetically sealed bottles.

Claims of Manufacturer.—Pasteurized apple cider conforming to the United States Department of Agriculture definition and standard for "fruit juice"; contains no preservative.

P. M. C.: MILK SUGAR (LACTOSE), NON-CASEIN SOLUBLE MILK PROTEIN; MILK SALTS, INCLUDING CHLORIDES, PHOSPHATES AND CITRATES OF POTASSIUM, CALCIUM, SODIUM AND MAGNESIUM

Manufacturer.—Protein Mineral Company, Inc., New York.

Description.—Dried milk whey with added milk whey minerals; including lactose, non-casein milk protein and milk salts (chiefly chlorides, phosphates and citrates of potassium, calcium, sodium and magnesium).

Manufacture.—Liquid milk whey, a by-product of the manufacture of cheese, is filtered and the residual fat removed by centrifugation. The mineral content of the resultant whey is increased with precipitated minerals from a separate portion of whey obtained by the addition of sodium bicarbonate or ammonia solution to whey. The precipitate is washed with water to remove the alkali and added to the filtered defatted whey to the extent of 2 per cent. The resulting liquid mixture is dried at a low temperature, producing a white amorphous powder which is packed in bottles.

Analysis (submitted by manufacturer).—

	per cent
Moisture	5.0
Ash	9.9
Fat (ether extract)	1.5
Protein (N × 6.38)	13.0
Lactose (Bertrand method)	68.0
Carbohydrates (by difference)	70.6
Calcium (Ca)	1.73
Chlorine (Cl)	2.10
Iron (Fe)	0.011
Magnesium (Mg.)	0.21
Phosphorus (P)	0.40
Potassium (K)	2.11
Sodium (Na)	0.68

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—For increasing the lactose and calcium content of individual foods or the diet as a whole. Readily miscible with water or milk.

READY FOR USE BISCUIT MIX (BLEACHED)

Manufacturer.—F. B. Chamberlain Company, St. Louis.

Description.—Self rising flour containing patent flour (bleached), hydrogenated cottonseed oil, powdered skim milk, sucrose, sodium acid pyrophosphate, salt, sodium bicarbonate and calcium acid phosphate.

Manufacture.—The ingredients are thoroughly mixed in a batch mixer and packed in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	10.1
Ash	5.0
Fat (ether extract method)	11.1
Protein (N × 6.25)	8.9
Reducing sugars as dextrose	0.9
Sucrose (copper reduction method)	3.6
Crude fiber	0.5
Carbohydrates other than crude fiber (by difference)	64.4

Calories.—3.9 per gram; 111 per ounce.

Claims of Manufacturer.—For biscuit, waffles and cake baking. The keeping qualities have been thoroughly tested.

CLAPP'S ORIGINAL BABY SOUP (ADDED SALT)

Manufacturer.—Harold H. Clapp, Inc., Rochester, N. Y.

Description.—Comminuted cooked soup stock prepared from potatoes, tomatoes, carrots, unpolished rice, cabbage, celery, meat broth, whole grain barley, salt, onions and water. The method of preparation is efficient for retention in high degree of the natural vitamins and minerals.

Manufacture.—The potatoes, celery, cabbage, onions, rice and barley are carefully cleaned. The broth is prepared by heating sirloin butts in water. Purchased canned carrots and tomatoes are used.

The prepared raw material and the canned ingredients are heated in an atmosphere of water vapor in closed glass lined Pfaudler kettles. After a definite cooking period the material is flowed into a monel metal straining apparatus or pulper, which is flooded with steam to exclude air. The pulped mass is pumped into a glass lined storage kettle, from which it falls by gravity to a filling machine, where it is filled into washed glass jars, which are sealed and are processed at a temperature of 116 C. for about one hour.

Analysis (submitted by manufacturer).—

	per cent
Moisture	88.6
Total solids	11.4
Ash	1.4
Salt (NaCl)	0.5
Fat (ether extract)	0.1
Protein (N × 6.25)	1.1
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	8.6

Calories.—0.4 per gram; 11 per ounce.

Vitamins.—The method of preparation efficiently protects the natural vitamin values.

Claims of Manufacturer.—For all table uses but especially intended for infants, children and convalescents and for special diets. Only warming is required for serving. The natural mineral and vitamin values are retained in high degree.

PARADISE SODA CRACKERS (SALTED)

Manufacturer.—Paul Schulze Biscuit Company, Chicago.

Description.—Soda crackers prepared from flour, lard, malt extract, salt, baking soda, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Manufacture.—The sponge dough containing flour, water, lard, yeast and a yeast food is fermented for nineteen hours at 26 C.; flour, malt extract, salt, water and soda are added to make a stiff dough, which is again fermented, rolled into sheets, partially cut into crackers, sprinkled with salt and baked on oven shelves at 232-260 C. for four minutes. The sheets are broken into crackers, cooled and packed in wax-paper inserts in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	6.0
Ash	4.1
Salt (NaCl)	3.7
Fat (official method I for bread)	10.3
Protein (N × 6.25)	10.1
Reducing sugars as dextrose	0.3
Sucrose (copper reduction method)	0.2
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	69.2

Calories.—4.1 per gram; 116 per ounce.

CREAM OF RICE (WITH SMALL PERCENTAGE OF POWDERED SKIM MILK)

Manufacturer.—Cream of Rice Corporation, New York.

Description.—Mixture of granulated polished rice with a small percentage of powdered skim milk.

Manufacture.—Polished Louisiana rice and broken rice are ground, bolted and aspirated to remove flour. Rice of desired granulation is heated to destroy any possible insect infestation, mixed with a small percentage of skim milk powder and automatically packed in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	9.8
Ash	1.0
Fat (ether extract)	0.8
Protein (N × 6.25)	8.6
Crude fiber	0.4
Carbohydrates other than crude fiber (by difference)	79.4

Calories.—3.6 per gram; 102 per ounce.

Claims of Manufacturer.—A quickly digested "smooth" cereal practically free from any indigestible roughage.

LARABEE'S AIRY FAIRY SOFT WHEAT PATENT FLOUR (BLEACHED AND MATURED)
AIRY FAIRY CAKE FLOUR (BLEACHED AND MATURED)

Manufacturer.—Larabee Flour Mills Company, of the Commander Larabee Corporation, Minneapolis.

Description.—A soft winter wheat "short patent" flour; bleached and matured respectively with a mixture of benzoyl peroxide with calcium phosphate (one-half ounce per barrel) and chlorine (three-fourths ounce per barrel).

Manufacture.—See procedure described in THE JOURNAL, June 18, 1932, page 2210.

Claims of Manufacturer.—For cake, biscuit, and pastry baking.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 24, 1933

THE MILWAUKEE SESSION

The annual session of the American Medical Association just held in Milwaukee aroused most favorable comment because of the exceeding smoothness of organization by the local committee in the handling of the convention affairs. Event succeeded event exactly on schedule without apparent extraordinary activity and to the immense satisfaction of every one who participated. Moreover, the hospitality of local physicians seemed to reach every convention visitor.

If the majority of visitors were asked to name the most striking feature of the convention they no doubt would choose the Scientific Exhibit. By a felicitous arrangement, the individual exhibits were for the most part correlated with the papers read in the various sections, except for special exhibits by various departments of the Association and others particularly planned by the Committee on Scientific Exhibit. Because of the practical and timely character of the exhibits shown, many of the exhibit spaces were crowded with visitors throughout the day. The Scientific Exhibit apparently constitutes one of the best types of direct graduate education available. Particularly interesting is the fact that several of the state societies are planning a similar arrangement on a smaller scale for the coming year, an evidence of the appreciation of this work by those who saw the exhibit function.

The opening meeting and the President's reception were delightfully arranged and attracted capacity audiences. The Woman's Auxiliary of the State Medical Society of Wisconsin and particularly of the Medical Society of Milwaukee County developed a program of entertainment which again met with numerous commendations. Almost a thousand women registered with the Auxiliary and there were perhaps an additional thousand who enjoyed the meetings, teas, luncheons and dinners without formally registering.

At the meetings of the House of Delegates, almost 160 delegates were in attendance. Topics of major interest to the medical profession that were discussed included the economics of medical service, changes in the nature of medical education, the certification of specialists and the routine work of the American Medical Association. In its executive session the House of Delegates tabled a resolution of the Committee for the Investigation of Birth Control and unanimously adopted a resolution against the persecution of any human being because of race or religion.

Exhibitors in the technical exhibits were also warm in their approval of the usefulness of this annual session, many of them expressing delight in what seemed to be a turn upward in general business conditions as reflected by numerous orders for books, medical preparations and apparatus. The total registration, over 4,600, afforded opportunity to exhibitors to meet considerable numbers of physicians and to give them at first hand insight into some of the newer methods and technics available in medical practice.

A final word must be said relative to the remarkable performance of the weather man responsible for conditions in the state of Wisconsin. Just before the opening of the annual session he blasted the Middle West with a heat wave that will still be recalled by the oldest inhabitants a century hence. As the visitors and Delegates began to arrive he suddenly relented and during the entire period of the annual session moderate temperatures and salubrious breezes prevailed. The foliage in the gardens of Wisconsin blossomed profusely, cooling beverages were available in abundance, and as the editor of the society notes in the country newspapers are wont to say, a pleasant time was had by all.

CERVICOVAGINITIS OF GONOCOCCIC ORIGIN IN CHILDREN

Vaginitis in young girls is a medical, social, sanitary and economic problem. It is a constant source of concern in the care of female infants and children and of young women, in home and school, in camp and orphan asylum, in day nursery, hospital, college, swimming pool, office and places of business. Little research or centralization of information on the subject has been done. As a detached problem, the control of vaginitis has engaged the attention of the general practitioner, the pediatrician, the gynecologist and the bacteriologist.

Brunet and others [1] have studied the disease from clinical, bacteriologic and sociological points of view in a series of 332 young children referred because of vaginitis of supposed gonococcal origin. Two hundred and forty-one children were studied with relative completeness, including 175 in whom vaginal endoscopic examination was made. Most of the cases were in young children. The ages ranged from infants under a year to girls of 13 or 14, but a fourth of them were 2 years or younger, more than half were under 6 and only one child in eight was older than 9. On admission, 192, or 79 per cent, of the 241 patients were judged to have

1. Brunet, W. M.; Tolle, Dora M.; Scudder, Sara A., and Medcalf, Anne R.: Cervicovaginitis of Gonococcal Origin in Children: Report of a Project of the Bellevue-Yorkville Health Demonstration of New York City, supp. 1, Hosp. Soc. Service Mag., 1933.

positive clinical gonococcic infection; 33, or 14 per cent, were grouped as suggestive, while 16, or 7 per cent., were considered normal clinically. In all, 233 cases, or 97 per cent, were judged to be positive or suggestive either by clinical observations or laboratory tests. Clinical and laboratory reports corresponded to a high degree, 85 out of 100 cases agreeing.

In this series, it was found difficult to trace the source of infection. The potential source of infection was ascertained in 113 of the 212 clinical cases considered in detail. In 104 cases, evidence of gonorrhea was found on examination in one or more members of the family. Of the seventy-six mothers examined, forty-six, or 60 per cent, presented clinical and bacteriologic evidence of gonorrhea; the remaining mothers showed evidence of chronic leukorrhea. Only twelve of the fathers were examined, but of these nine were infected. While infection from contaminated articles, such as towels, toilets and bathtubs, is by no means impossible, the majority of the cases studied resulted from close intimate personal contact within the home. Gonococcic cervicovaginitis in the children of this series was infrequently the result of sexual contact.

Cervicovaginitis in children does not differ widely from a similar infection in adults. Its course resembles that in adults. Smarting and frequent urination started in from three to eight days after infection, with a subacute or chronic stage soon developing. The difference from the adult picture lies in the rarity of inflammation of the vulvovaginal glands, the urethra, and the fallopian tubes and peritoneum. In only four cases of the series did pelvic involvement occur, and eye infection in but two, only one of which was gonococcic. Rectal involvement was rare, and arthritis was not observed.

Examination of the cervix, however, showed it to be infected in about four fifths of the cases. The clinical appearances in the positive cases ranged from a slight redness of the cervix to the large soft edematous type which bleeds easily when swabbed. Several patients had ectropion of the mucous membrane, and a large number had a granular condition about the external os. No high degree of erosions was seen. There was a strong tendency to persistence of the inflammation.

Careful bacteriologic studies were made in 322 cases of the series. Of this number, only three cases showed gram-negative diplococci other than gonococci. However, the demonstration of typical biscuit shaped gram-negative diplococci in stained films of secretions from the genito-urinary tract gave only presumptive evidence of gonococcic infection. Cultures were found to be the most important method of checking up on cases of cervicovaginitis. Newly infected cases ran a typical course and gave positive smears and cultures for from eight to fourteen weeks. Cultures were of little value in the diagnosis of some of the chronic treated cases, but often unexpected results were obtained from cases that appeared clinically negative. Pathogenic organisms such as streptococci were isolated from the genito-urinary secretions in some cases. Other organisms found occasionally were gram-negative bacilli, sarcinae, and Döderlein's bacilli. No true diphtheria bacilli were found. The application of fresh animal serum at the site of a probable gonococcic infection, namely, the cervix and urethra — as suggested by Pribram and Jonas [2] in 1928, was found to be a valuable aid as a provocative in the diagnosis of the early chronic cases in which cultures had become negative.

Treatment in this series did not abort the disease. Its course, as compared with eighty-four controls which had mere external genital cleaning, was somewhat shortened by instillation of mercurochrome in 2 per cent aqueous solution applied daily at home and by mercurochrome in gelatin applied through a endoscope at the clinic. Vaccines did not shorten the course in fifteen cases. The results seem to indicate that gonococcic cervicovaginitis in young girls is a self-limited infection and usually fades out within a few months.

This study shows the need of further diagnostic tests to differentiate, in the last stages, the gonococcic from the nongonococcic forms of vaginitis, and also tests to detect latent uncured cases which may be the unrecognized carriers of gonococcic infection; and, lastly, tests for proof of cure. In brief, the study consequently should serve as an incentive to further work on vaginitis of children with a view to the development of better methods of prevention and treatment.

AN IMMUNOGENIC PARADOX

Investigations currently reported by Dr. L. T. Webster [1] from the Rockefeller Institute indicate that selective breeding of animals resistant to one microbic disease may inadvertently produce animals hypersusceptible to other infections. The geneticists have pointed out many examples of similar "linkage" between hereditary functions. They would merely assume that hereditary microbic resistance involves a multiplicity of unit factors carried by different chromosomes. The observations have, however, immediate practical interest in their bearing on problems of animal husbandry.

Webster's studies were made on mice reared and maintained for nearly two decades under the most scrupulous hygienic conditions. During this time the herds of mice had never been exposed to microbic infections. The most painstaking examinations had failed to reveal "carrier" conditions. On routine exposure of these herds to standard doses of mouse typhoid bacillus, the mice showed on an average 37.4 per cent herd mortality. The general mouse population, therefore, was 37.4 per cent susceptible to B. enteritidis when tested with standard doses and under standard dietary and climatic conditions. By

2. Pribram, Ernst, and Jonas, E.: Proc. Soc. Exper. Biol. & Med. **25**: 627 (May) 1928.
1. Webster, L. T.: J. Exper. Med. **57**: 793, 819 (May) 1933.

selective breeding, this population was segregated into two immunologically distinct mouse strains. The first, or susceptible, strain showed an 85 per cent herd mortality. The second, or resistant, strain showed but a 15 per cent B. enteritidis mortality. By twelve generations of brother-sister inbreeding even higher hypersusceptibles were produced, one inbred strain showing an 89 per cent and another a 97 per cent B. enteritidis susceptibility.

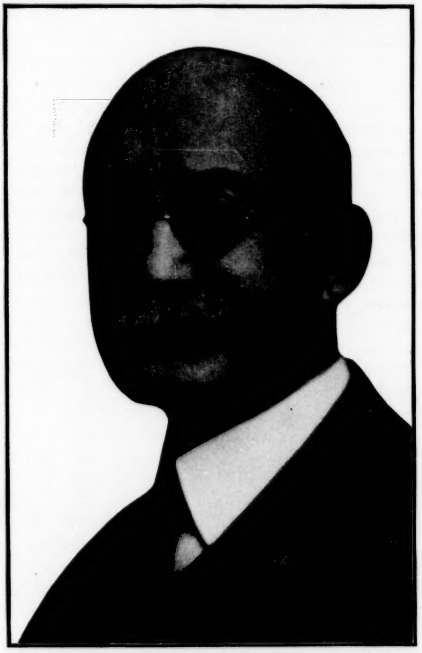
By hybridization of the susceptible and resistant mouse strains, Dr. Webster found that the hereditary microbic resistance is not "sex linked" and tends to be transferred as a "dominant" genetic character. Thus, 89 per cent susceptible males or females crossed with 15 per cent susceptibles gave progenies showing a 17.7 per cent susceptibility. Back-crossed with susceptibles, Dr. Webster obtained a second generation progeny showing a 61.2 per cent herd susceptible. Back-crossed with resistants, the second generation susceptibility was 34.2 per cent. A comparison of all herds with respect to sex ratios, relative fertility and body weight showed that the hereditary B. enteritidis resistance is not appreciably correlated with bodily vigor. From this one might conclude that selective breeding of domestic animals for bodily vigor alone would not necessarily produce immunologically superior herds.

In order to throw light on the mechanism of this hereditary microbic resistance, comparison was made of the relative importance of hereditary portal defenses and inherited internal tissue resistance. This comparison showed that the resistant herds not only have more perfect superficial mechanical defenses to microbic invasion through the gastro-intestinal mucosa but that their internal tissues are also more resistant to direct subcutaneous, intraperitoneal and intravenous injection. These mice were also relatively resistant to nasal or pulmonary invasion by certain other infectious agents, such as Pasteurella avicida, Friedländer's bacillus and the pneumococcus. This resistance, however, was shown only when these agents were given intranasally and not when injected directly into internal tissues. Dr. Webster's paradox arises from his observation that hereditary resistance to B. enteritidis is apparently "linked" with hereditary hypersusceptibility to louping-ill virus.

Current Comment

WALTER L. BIERRING, PRESIDENT-ELECT

The election of Walter L. Bierring to the presidency of the American Medical Association comes to him as the culmination of a career of significance in medical organization. He has been awarded the presidency of the Iowa State Board of Health and the Iowa State Board of Medical Examiners (1914-1922); presidency of the National Board of Medical Examiners; presidency of his county and state medical societies; presidency of Alpha Omega Alpha, honorary medical fraternity, and a regency in the American College of Physicians. Dr. Bierring was born in Davenport, Iowa, July 15, 1868, of Danish parentage, indeed, of the family which explored the northwest passage and the Bering Sea. He was educated in the schools of Davenport. He attended the State University of Iowa, in both arts and medicine, receiving his M.D. degree in 1892. His postgraduate study abroad included pathology and bacteriology in Heidelberg in 1892, in Vienna in 1892-1893, and in the Pasteur Institute of Paris in 1894. After his return from abroad he became professor of pathology and bacteriology, and later of the theory and practice of medicine in the Iowa State University College of Medicine (1893-1910). From 1910 to 1914 he was professor of theory and practice of medicine in Drake University College of Medicine. From the earliest days of his career in medicine, Dr. Bierring has been particularly interested in problems of medical education. He has served for some years as secretary-editor of the American Federation of State Examining Boards and was also a member of the Commission on Medical Education. He is well known as an internist. His practice has included the position of attending physician at the



WALTER L. BIERRING, M.D.
PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION

Iowa Methodist, Iowa Lutheran and Mercy hospitals. In 1921 he was made an honorary member of the Royal College of Physicians of Edinburgh in recognition of his services in connection with medical licensure and reciprocity between Great Britain and the United States. Recently he was appointed state health commissioner of Iowa, which position he will assume, July 1. His contributions to medical literature have included articles particularly concerned with the heart and the circulation. He was secretary of the Section on Pathology and Physiology of the American Medical Association in 1905-1906 and chairman in 1907. He served also as chairman of the Section on Practice of Medicine in 1919. Dr. Bierring was a member of the House of Delegates, representing the Iowa State Medical Society, in 1904, 1905 and 1906; in 1910 and 1911 he was a member of the House as a delegate from the Section on Pathology and Physiology, and in 1922, 1923, 1924 and 1925 as a delegate from the Section on Practice of Medicine. In presenting Dr. Bierring to the House of Delegates, the delegates from Iowa called attention to the service which Dr. Bierring has rendered as a practitioner of medicine in contact with the people. In all his activities Dr. Bierring has recognized constantly the position of leadership which the American Medical Association must occupy as the only democratic representative of the medical profession in this country.

MATURATION HYPERSUSCEPTIBILITY

Recently THE JOURNAL commented on the spontaneous "serologic ripening" presumed to occur in growing children. It may be that this does not always function to their specific advantage, taking for instance the form of a "maturation hypersusceptibility" in place of the expected "maturation panimmunity." This possibility is suggested by Dr. E. L. Burky's[1] studies of the normal maturation cycle, made on rabbits, with staphylococcus filtrates as the test antigens. The selected filtrates were highly toxic for normal adult rabbits, intravenous injection of 0.25 cc. per kilogram of body weight usually causing death within twenty-four hours. When these filtrates were injected intravenously into young rabbits, however, no symptoms were observed, even when the dose was increased to 2 cc. per kilogram of body weight. This dose is at least eight times the usual adult minimum lethal dose. This toxin insusceptibility of young rabbits continues till about the fourth month, when the normal adult susceptibility begins to be demonstrable. One easily studied feature of this susceptibility is the parallel development of cutaneous allergy. Intracutaneous tests with highly toxic staphylococcus filtrates invariably give negative reactions in young rabbits until the approach of the fourth month. After this the local skin reactions are positive, as in the adult. Since the serum of nonreactive young rabbits will not passively immunize or "desensitize" adult rabbits to staphylococcus filtrates, Dr. Burky concludes that the nonreactivity of young rabbits is not due to an immunity in the ordinary sense. He postulates a "lack of a reacting mechanism at birth." This theory of an inherent immunochemical deficiency is not original with Burky. It was suggested at least two years ago by Kobak and Pilot[2] of the University of Illinois, to explain a similar nonreactivity in infants. They found that, while about 95 per cent of all human mothers are skin reactive to Staphylococcus aureus vaccines, less than 2 per cent of their children under 2 months of age are reactive. The proportion increases to about 10 per cent by the fourth month and to 25 per cent by the eighth month, and approaches 70 per cent by the end of the first year. Whether or not this maturation cycle in infants and young rabbits is due to spontaneous physiologic changes or to environmental influences has not yet been tested. The work, however, is of basic interest, since it suggests the possibility of new interpretations of adult cutaneous sensitivity to numerous other toxic or infectious agents.

1. Burky, E. L.: J. Immunol. **24**: 127 (Feb.) 1933.

GROWTH VERSUS LONGEVITY

Modern nutrition is based on the intuitive belief that diets which produce optimal growth in young animals will also produce optimal health and prolong life. McCoy[1] of Cornell University, however, holds that longevity and acceleration of growth are incompatible. Though not applying his conclusion to human medicine, he has no hesitation in applying it to veterinary science. Thus he writes that "the nutrition of animals that are to be slaughtered for meat shortly after they mature should be considered from the point of view of rapid growth. . . . The same philosophy, [however, does not apply] to the rearing of dairy calves and horses [in which] it is desirable to have a long productive life span." The possibility of a physiologic incompatibility between accelerated growth and longevity was suggested more than fifteen years ago by Osborne and Mendel[2] on the basis of nutritional data from rats. This suggestion was afterward confirmed by other investigators, using data obtained from nutritional studies with insects and brook trout. McCoy, however, draws his present conclusion from much more dramatic data; namely, a comparison of the average life span of modern laboratory-fed rats, with longevity records, twenty years ago, before rats had the benefit of modern research on vitamins. Twenty years ago, rats fed on the crude mixed diets of that period were reported to be of slow growth, many of them not reaching full adult size till the end of one year. Certain recorded groups of that time, maturing slowly, showed an average life span of more than three and one-half years. McCoy's rats of today, fed modern diets for accelerating nutrition, reach full adult size before the end of the first six months and live on an average for less than eighteen months. Slow growth and a short life span may result from certain dietary deficiencies. "No one has ever found it possible, however, [to devise a diet that will give] both rapid growth with early attainment of maturity and longevity." Whether or not this end could be obtained by two diets, a forcing diet during the growth period followed by more conservative nutrition during adult stages, has not yet been reported.

2. Kobak, O. J., and Pilot, Isadore: Proc. Soc. Exper. Biol. & Med. **28**: 584 (March) 1931.
1. McCoy, C. M.: Science **77**: 410 (April 28) 1933.
2. Osborne and Mendel: Science **45**: 294, 1917.

PROCEEDINGS OF THE MILWAUKEE SESSION

MINUTES OF THE EIGHTY-FOURTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT MILWAUKEE, JUNE 12-16, 1933

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 12

The House of Delegates convened in the Grand Ball Room of the Schroeder Hotel, and was called to order at 10 a. m. by the Speaker, Dr. F. C. Warnshuis.

Preliminary Report of the Reference Committee on Credentials

A preliminary report of the Reference Committee on Credentials was submitted by the chairman, Dr. J. D. Brook, Michigan, who reported that over one hundred delegates with proper credentials had registered, and commended the promptness of the delegates in registering.

The Speaker, not hearing any objections, declared that the list of delegates in the hands of the Reference Committee on Credentials would constitute the roll of the House for the first meeting.

Adoption of Minutes of New Orleans Session

The Secretary stated that the minutes of the New Orleans session of the Association had been printed and put into the hands of all members of the House of Delegates, and that no corrections or amendments had been received. No objections being heard on the floor of the House, the minutes were adopted as printed, on motion of Dr. Charles E. Humiston, Illinois, seconded by Dr. Arthur J. Bedell, New York, and carried.

Owing to the death of Dr. Albert E. Bulson, Vice Speaker, the Speaker appointed the Secretary, Dr. Olin West, to act in this capacity temporarily.

The Vice Speaker, Dr. Olin West, took the chair while the Speaker read his address, which was referred to the Reference Committee on Reports of Officers:

Address of the Speaker, Dr. F. C. Warnshuis

Members of the House of Delegates:

The thoughts and hopes of the medical profession of this nation are centered this week in this House of Delegates. Every county and state medical organization appeals earnestly and hopes trustfully that your deliberations and enactments will formulate policies and procedures that will be helpful in their attaining solutions of the local and individual problems that confront them. Every delegate should deeply sense his obligations and clearly recognize the magnitude of the trust that is reposed in him as a member of this House that must determine the policies of the Association. That responsibility is greater today than during former sessions.

This House is confronted by conditions created by epochal events in our national life. They may necessitate revision of attitude and intensified activity with increased alertness as to how best to enhance the vital interests of the public and the profession.

There is need for keen appraising judgment. The greatest acumen must be subpenaed in order that your final acts will well meet up to the demands of the times and continue to maintain the present high standards, functions and leadership of the Association. Emotionalism must not supplant judgment. The needs of the hour must not warp our vision or duty to the future. Your Speaker is confident that you will respond to the need of the times by recording action that will reflect mature deliberation characterized by constructive, guiding enactments.

It is desirable and essential that you secure every fact and obtain all possible information before final opinions are expressed. To assist you in securing facts and accurate information there will be available to reference committees and delegates the Trustees and executives of the councils and bureaus of the Association and members of the headquarters personnel.

Our Association's activities have many ramifications. They intermesh in many of the Association's functions. They are all interrelated and interdependent. Consideration should be given to this fact before final action is taken on any question or when new programs are initiated.

Your Speaker has been advised to emphasize this caution during this session, which is confronted with extraordinary problems. Reference committees are advised to secure detailed information concerning Association affairs when they construct committee recommendations. Delegates likewise would do well to confer with these sources of information before sponsoring a specific resolution or a motion dealing with Association policies. Remember that however commendable your zeal may be and however soundly your arguments are constructed and applied to your own state, they may be of little value or aid when viewed in the light of what is or what will be most beneficial and applicable to a community, a state or the nation. It would be prudent to reflect that local problems are best met by local action. As a rule, they are not amenable to national enactments.

Delegates who for the first time are representing their state organization are assured that active participation in the deliberations of this body is a duty that they owe to the profession they represent. Every officer and member of this House will deem it a privilege to be of helpful assistance to you.

It has been gratifying to observe the manner in which a goodly number of state delegations reported, in extended detail, the proceedings of the last annual session to their state organization. Every state delegation should adopt this policy. The members in your state should be thoroughly enlightened in regard to the actions and functions of their national association. Characterize your service as a delegate by submitting a complete report to those whom you represent.

COMMITTEES

Appointments to Reference Committees have been made to give nation-wide representation on a Fellowship basis. It is recommended that delegates attend and participate in committee discussions. By doing so you will expedite the work of this House.

Your Speaker refrains from advancing specific recommendations. I do, however, renew my expressions of deep appreciation for the honor of serving as your presiding officer. To do so with every consideration for the rights of every delegate will be my steadfast purpose. I am sincerely grateful for the trust reposed in me.

DEATHS

And now, conforming to your instruction, it becomes my duty to call on you to pause to pay tribute to the memory of those who were of us but now are no more.

They are gone from the mountain
They are lost to the forest.

In this hour of memory and tribute, I officially report the death of: L. E. Broughton, Alabama; F. C. E. Mattison, California; J. S. Helms, Florida; Albert E. Bulson, Indiana; J. W. Van Derslice, Illinois; T. O. Freeman, Illinois; J. A. Card, New York; E. C. S. Taliaferro, Virginia; Frank Billings, Illinois; W. S. Thayer, Maryland, and A. R. Mitchell, Nebraska. These departed Fellows kept the faith and upheld

the honored traditions of their profession. The now sacred memories that each bequeathed to us formulate our lasting tribute:

Wherefore, for us when real men die, shall be no mournful graveward glance. Our souls, with theirs, invade the sky and to immortal strifes advance. For great is our inheritance when real men die.

That inheritance to us is the memory of friendship endeared by their contributions for the joy, happiness and fulness of all life for their fellow man. "Their sun of life has set as sets the morning star, which goes not down behind the darkened west but fades away in the glorious light of Heaven!"

They shall not be forgotten men!

This House will now stand in momentary silence to pay respect to all honorable members of the profession who have gone during the past year.

Reference Committees

The Speaker resumed the chair and appointed the following reference committees:

SECTIONS AND SECTION WORK

Isaac A. Abt, Chairman.....Section on Pediatrics
J. W. Amesse.....Colorado
E. F. Cody.....Massachusetts
R. W. Fouts.....Nebraska
J. N. Hunsberger.....Pennsylvania

RULES AND ORDER OF BUSINESS

J. F. Hagerty, Chairman.....New Jersey
D. E. Sullivan.....New Hampshire
Horace J. Brown.....Nevada
H. A. Gamble.....Mississippi
M. L. Stevens.....North Carolina

MEDICAL EDUCATION

Irvin Abell, Chairman.....Kentucky
E. D. Plass.....Iowa
W. H. Ross.....New York
S. P. Mengel.....Pennsylvania
Mather Pfeiffenberger.....Illinois

LEGISLATION AND PUBLIC RELATIONS

C. E. Mongan, Chairman.....Massachusetts
C. J. Whalen.....Illinois
E. M. Pallette.....California
Wells Teachnor, Sr.....Ohio
A. A. Ross.....Texas

HYGIENE AND PUBLIC HEALTH

W. F. Draper, Chairman.....Virginia
J. G. Taylor.....Wisconsin
G. C. Madill.....New York
J. N. Henry.....Pennsylvania
W. A. Cook.....Oklahoma

AMENDMENTS TO CONSTITUTION AND BY-LAWS

Holman Taylor, Chairman.....Texas
Ben R. McClellan.....Ohio
J. R. Bloss.....W. Virginia
E. L. Skidmore.....Utah
J. M. Birnie.....Massachusetts

REPORTS OF OFFICERS

F. S. Crockett, Chairman.....Indiana
C. T. Pigot.....Montana
J. H. O'Shea.....Washington
J. N. Vander Veer.....New York
E. A. Hines.....S. Carolina

REPORTS OF BOARD OF TRUSTEES AND SECRETARY

N. B. Van Etten, Chairman.....New York
W. R. Molony.....California
W. D. Chapman.....Maine
W. F. Braasch.....Minnesota
H. H. Shoulders.....Tennessee

CREDENTIALS

J. D. Brook, Chairman.....Michigan
D. A. Rhinehart.....Arkansas
W. H. Myers.....Georgia
C. R. Scott.....Idaho
H. A. Miller.....New Mexico

MISCELLANEOUS BUSINESS

H. M. Johnson, Chairman.....Minnesota
George Blumer.....Connecticut
J. F. Hassig.....Kansas
B. L. Bryant.....Maine
A. R. McComas.....Missouri

MEDICAL ECONOMICS

The Speaker, on motion of Dr. Arthur J. Bedell, New York, seconded by Dr. C. S. Gorsline, Michigan, authorizing him to do so, appointed the following reference committee on Medical Economics:

A. J. Bedell, Chairman.....New York
W. F. Donaldson.....Pennsylvania
C. W. Waggoner.....Ohio
Dudley Smith.....California
Jabez N. Jackson.....Missouri

Address of President Edward H. Cary

The Speaker, in presenting the President, Dr. Edward H. Cary, Dallas, Texas, said:

It is a high honor to be President of our Association. In turn our Association is honored by its President. Few delegates realize and very few Fellows appreciate the tremendous contribution that is made to our Association by our Presidents.

We have been passing through troublesome times. Event after event has presented itself demanding action in order that our Association's interests be conserved, our policies sustained and our future enhanced. We have indeed been fortunate in having as our President one who was peculiarly fitted and exceptionally capable to meet the exceeding heavy demands that devolved upon him. Dr. Cary has responded in a most commendable manner. He has made a contribution that I do not believe has ever been equaled by a President of this Association. During his term of office he has traveled 99,190 miles on official business. He has been away from his home over 340 days, almost an entire year, in keeping 80 engagements in which he was the Association's official representative — a wonderful record of faithful service.

It is my privilege and pleasure to present to you one who has served so well, your President, Dr. E. H. Cary.

Dr. Cary thereupon delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

I come to you today with sincere appreciation of the opportunity which you have given me to serve the medical profession of this country and possibly the people. Unfortunately, conflicting engagements prevented me from accepting some of your invitations, but I have traveled widely and spoken numerous times, striving always to be worthy of your high trust. From these contacts on many happy and auspicious occasions I have gained inspirations, friendships and delightful memories, which I shall always treasure.

Concurrently with my occupation of this august office has occurred the worst period of this era of depression. There has been great restlessness among the members of our profession, some of whom were ready to adopt new methods of practice or become attached to untried schemes which might offer quick monetary returns. Only the force of medical opinion, grounded in ethical traditions and reaffirmed here and there, could steady this distressed doctor until the economic situation changed or until reasonable adjustments could be projected and presented for discussion. Fortunately the tide has turned, and there is time for due consideration of the future economic and ethical relations of the profession to the public.

Your official family, whether its members are devoting all or part of their time to the business of our organization, have faithfully attempted to interpret the demands of the hour and have cooperated to sustain the high purposes for which the American Medical Association came into being. Contacts of very wide scope have been made; old ties have been reenforced so that the policies of the organization have won favor and been generally adopted.

May I call your attention to a few of the outstanding policies carried to a successful issue:

First, the contention of our profession that the American physician should have the right to use his own judgment in prescribing alcoholic liquors. This principle has been accepted by Congress and a law passed which seems desirable to the members of our profession who have been interested in destroying restrictive legislation. The question of prescribing whisky for therapeutic purposes is placed on a basis on which medical men are to be trusted, and, to maintain the high standards and dignity of our profession, they cannot be other than worthy of this trust.

Second, the contention of the profession that a federal law which affects the practice of medicine is undesirable when it is directed by a bureau under lay control from the seat of the national government; for example, the Sheppard-Towner Act. All activities of this character, regardless of their humanitarian purposes, should be the result of the combined influence of the profession and interested citizens who advocate such services in their own states. The sentiment can be developed and the purposes of such measures made more effective if they have gained

the support of the profession, without enlarging the possibility of national paternalistic legislation. We believe, that through the state public health service and the intelligent use of their responsibility, the people will support such activities which are needed to meet the demands for a better care of the mothers and babies of the many commonwealths.

Third, we recognize that the narcotic question is international in aspect and will require further international agreement before it can be controlled. Narcotic legislation has received most careful consideration, and an enlightened policy has been followed. The Uniform States Narcotic Act had its origin from the work of one of your committees, created in 1919. Of course, much work has been done in conferences with other groups. Some of the states have already passed the act, and no doubt others will rapidly follow. It has been found that the federal law, however valuable, fails to meet effectively the local situation.

Fourth, your legislative committee has labored earnestly to meet the issue raised by the ever growing service to the veterans which is the result of legislation in their interest. The question of hospitalization has been a serious one and, though there has been no desire to prevent the most liberal care on the part of the government for the service-connected disabilities due to the war, we have strenuously objected to the liberalization of laws which permit the man who is able to pay for medical service to enter veterans' hospitals for free medical care. We have objected to more hospitals being built unless they are needed to care for those suffering with tuberculosis or with mental and nervous disorders, or unless they are needed as old soldiers' homes.

Your President, with Dr. Woodward, appeared before the joint committee of the Senate and House. The opportunity was accorded us to present what we believed to be your point of view on this question. The committee manifested an increasing interest in our presentation. Many questions were asked and we both felt that the committee agreed in the main to the principles we supported. Undoubtedly, a widespread sentiment has been developed in Congress that our government has gone far enough in its hospitalization program. We believe that the status of this question is in harmony with your views. Since the advent of the new administration, we have been told that no more hospitals are to be built, even though the money has been appropriated; that some of the hospitals already built are to be closed, and that hospitals in process of construction and considered desirable will be finished and used. We were informed that the beds occupied by non-service-disabled veterans will be gradually assigned to those who are suffering with tuberculosis or nervous and mental diseases, while some of the hospitals are to be altered so that they can be used more and more for domiciliary care.

Following the adoption of the economy program of the President as to veterans' gratuities, an order was issued to the medical officers of the veterans' hospitals by General Hines, humane in tenor, stating that only those who were well or those who could be properly discharged from the hospitals be sent home. This order has resulted in about fifteen thousand patients being dismissed up to June 3, 1933. This is reflected in the cancellation of certain contracts with the army and the navy and in the reduction of personnel, physicians, nurses and other help, in many of the hospitals which remain open. There has been an effort made to reduce the occupancy of all beds heretofore used by the non-service-connected disabled soldier and, when this point has been reached, then the future use of the beds will come from a very numerous group of service-connected cases, many of which are now being cared for at home. In other words, the department intends to keep the present beds, totaling 41,000, in veterans' hospitals in service. The rebellion of the Senate and House, forcing a compromise, may reopen many phases of the question.

We must not lose sight of the fact that the present program is also the result of a depleted treasury and, if the economic situation of the country should improve before the present policy is well established, the demands of the veterans having non-service-connected disabilities may reestablish abuses of governmental aid to which we have objected. Hence, it is necessary for members of our profession to continue their opposition; otherwise, we shall be confronted with the same situation as it existed before Congress gave its support to the request of the courageous President of our country.

Fifth, the Report of the Committee on the Costs of Medical Care has stimulated the interest of the public and of the profession.

The Minority Report of this committee has been supported by the members of your official family and, though both the Majority and Minority reports have been given wide circulation and thoroughly discussed, we feel that the great majority of the members of the medical profession throughout this country is supporting the Minority Report, both as to principles enunciated and as to the expediency of not determining a far-reaching policy affecting the medical profession at a time when the economic status of this country is abnormally low and likely to improve.

While cognizant of the demands made on the profession to readjust its methods and practices, we have protested that readjustments, if needed, should follow a full and complete discussion of all phases of the subject. We have believed that a solution can be found, through the cooperation of medical men who are deeply interested, that will not involve the destruction of fundamental values underlying medical practice. With this in view, the county medical societies have been encouraged to give serious study to the economic phases of the practice of medicine and to solve their problems, keeping in mind the fundamental principles underlying our ethical relations to one another and to the public.

We recognize the varying conditions and realize the impossibility of meeting this difficult situation with any one plan such as those that have been offered from various sources. Our organization is striving through its leaders at headquarters and elsewhere to serve the public and the profession of medicine, first, by discussion of problems; secondly, by trial of suggested plans; thirdly, by searching for and finding the truth, and thus be able to crystallize the professional mind so that unity will prevail. We all recognize that until there is unity of spirit and professional desire among the members of the county medical societies which are units of our organization, no plan, however far reaching and humanitarian in its aspects, can hope to live without the cooperation of the majority of men practicing in that locality.

The desideratum to be ever kept in mind and preserved is the right of the patient to choose his physician. A free road or pathway should be kept open from physician to patient. Hospital budgeting plans should never include medical services. The two services should be kept separate and distinct.

THE RELATION OF THE PRIVATE PHYSICIAN TO THE HEALTH DEPARTMENT

On this subject of vital importance to the people and to the profession, permit me to repeat a few comments I have made to public health men.

The relation of the private practitioner to the health department is sometimes made uncertain from the things he reads; the fundamental reason for his support may be there, but some one has raised, through statements or innuendo, doubt and fear as to the future of medicine. Organized medicine has come thus far because of its devotion to education used in its broadest sense. It has directed the forces which have made possible the educational enterprises which give to the service of the people, the highly trained medical men of our time. Organized medicine has at the same time, through its machinery given support, aid and comfort to campaigns which might advance the health forces of the nation. I think we can generally hold to the view that men who have charge of the health of the nation should have had the education and environment to make of public health servants experienced doctors.

An undergraduate medical school's function is to create doctors and not specialists, but I dare say every graduate of our class A medical schools has sufficient basic and general knowledge to acquire special knowledge readily by following that routine to which he is directed. This routine takes the graduate into practice with many experiences and to special places for intensive study, finally to be equipped to commence work in the chosen field, there to learn how to make useful his information gained through honest toil under happy circumstances.

We are deeply interested in the people having the benefit of all the knowledge necessary to protect them from disease, whether it be epidemic or among individuals in our immediate

care; and we agree, when a community is without the protection which comes from a well organized health program, that it is undoubtedly a mistake which may develop into a catastrophe.

Organized medicine as a whole is not willing to assume the errors of judgment or lack of medical leadership which prevails in any community where intelligent cooperative helpfulness toward public health is lacking; therefore organized medicine has a duty to perform.

Ferrell stated in an article in THE JOURNAL, May 6, that there are 967 cities in the United States with 10,000 inhabitants or over. Of these, 416 (43 per cent) employ full time health officers, of whom 265 (64 per cent) are physicians and 151 (36 per cent) are not. The 151 lay health officers are serving in twenty-five states. Forty-one of them are distributed in twenty-two states, and 110, or 73 per cent, are serving in the three states of Massachusetts, New Jersey and Pennsylvania. In these three states there are 220 cities of 10,000 inhabitants or over, of which 126 have full time health officers, of whom sixteen, or 13 per cent, are physicians, and 110, or 87 per cent, are not physicians. There are about 110 cities in the same states without full time health officers. He also states that there is a failure to provide medical leadership in health work in other states. We note that the nonmedical health officers are distributed in twenty-five states. There is evidently a lack of medical leadership in many where such a condition exists. It is of supreme importance that a clearer understanding of the responsibilities assumed by both the profession and the health officers should be so defined that organized medicine would more effectively support a program in which a complete agreement of an enlarged service of preventive and medical character would be made workable in the states which compose this great nation.

It would seem necessary to find a formula which would be readily accepted by those doctors who are engaged in private practice and by public health workers whereby the people would provide welfare budgets to compensate not only the health officer but the physician. These forces would then find a common ground in the support of a health department which contemplated the use of physicians who would more definitely render the needed service in an enlarged program of education in preventive and personal care of the health needs of the community.

It has often been said that the people have already been educated to believe in the efficiency of preventive measures; they subscribe to the theory that immunization is a demonstrable success. They know that epidemics can be modified or prevented through the activity of a well organized health department cooperating with a willing medical profession.

The leaders of three important forces are already educated to the value of applying the knowledge which is available for conserving the health of the people and controlling incidents of disease. These three forces are in a position to act, provided they are worthy of their responsibilities.

First, the public health officer whose knowledge and sincerity are known to the medical profession and the public. This would suggest that being a public health officer carries with it far more than political preferment; that he has won his place through education, adaptation and zeal, and a broad conception of human relations with a political prescience which, in itself, makes him unusual among his fellows. Necessarily, to gain the complete confidence of one of the vital forces, the members of the medical profession, it would be less difficult for the public health officer if his fundamental training is that of the physician.

The second force which can be found in every community is the broadly educated, far seeing medical practitioner, who believes firmly in the beneficent application of the applied sciences and subscribes to a doctrine which, in itself, leads to a broader need of medical service from the practitioner. Without undue thought he realizes that the health, happiness and prosperity of the people of a community are a trinity of social significance on which future medical service may emanate and for which the medical man is repaid for his contribution to the common welfare. Service to living people extends to the grave. Longevity has its rewards in multiplied services needed from the medical profession. To serve people who suffer from disease and who are in despair offers emotional satisfaction to physicians, for to help without thought of material reward has given deep gratification to members of a great profession whose thoughts are of others and not of themselves. How much wiser and more beneficent, however, to combine our knowledge and influence to prevent disease and despair, finding elation from concerted action with an improved economic situation for all concerned.

The third force is enlightened public opinion. The people, ever optimistic and sometimes overcredulous, believe in the wonders of science. They have been so impressed with what has been accomplished in the prevention and cure of disease that they are impatiently seeking all the values to be had, anticipating the practical application of experiments before they are proved.

Among these three forces will be found the leaders who can be merged into a composite fighting battalion to mold their own kind into an effective unit for the common good. Leaders of each group must first stamp out suspicion and parallel high service with human needs, not losing sight of the underlying economic situation; for lasting results depend on economic satisfaction.

The attitude of society should be directed to its own responsibilities. It should either correct the causes leading to dependence or assume its burdens as related to the sick so that this demand on the profession is cared for by society and not expected from the doctors. This should be accomplished through the use of the members of the county medical society and the local health agency. It is essential to cultivate public opinion to develop an adjusted budget by the various communities to meet their local health requirements.

Indigence should not be encouraged but should be recognized as a part of the social deficiencies which are to be met from a general fund rather than the present plan, which lacks the advantage of a definite responsibility. It is undoubtedly to the advantage of society as well as to the indigents to establish more concretely the forces that lead to the best remedial care. When attempting to construct a plan in one's own mind, which might aid in the solution of the difficulties which arise to separate these three groups, we must consider the strength of these forces, which through training and experience are to cooperate. Their respective influence on their associates and society is important. With this in mind, we evidently turn to the most logical group whose purposes and ideals definitely harmonize and whose machinery is best adapted to make it the one great power which can be used for the common good.

My friends, wherein does this power lie? Is it not in and through organized medicine? Has not the health and happiness of the people always been dear to the men who have made and who sustain the American Medical Association?

A great community interest encourages the individual doctor and sharpens the competition for him because the people are free to choose the men who can retain and best use the information acquired. This is made possible for all the people because of the activity and orderly force created and kept alive by organized medicine.

We believe that the conduct of the Association is well worthy of your approval, for it has not lost a significant point in policy or legislation in the last five years. Whatever success we have attained can be in large part attributed to the loyalty of the rank and file of intelligent men who keep abreast of the complexities of the day, whether the problem is scientific, social or legislative in character. These loyal men realize that the medical profession can consciously determine its own destiny, for, after all, who can take the place of the medical men? We believe that we know how to educate and make useful the men in our profession. We realize that the restraint needed to curb the overambitious comes from within the profession. We know human nature. Medical practice has raised certain safeguards for the good of the practitioner and the patient.

In this connection, THE JOURNAL is the greatest means we have for distributing quickly information; without it we should be helpless in quickly mobilizing professional opinion. Although it is true there are many members of the American Medical Association who do not take THE JOURNAL—and let it be said here that they are appreciated members through their county medical societies—yet it must be clear that only through subscribing to the greatest medical periodical on earth do they become contributing members. No other journal of national interest in any other land can be had for the price paid for THE JOURNAL. A reduction in the subscription price, if only one dollar a year, would, the past year, have converted a net

gain of the Association into a probable loss, thereby curtailing many of the valuable activities of the organization. Our organization cannot safely retrench at this point, for THE JOURNAL is worth more than it costs in money and the money is needed and used in the interest of its members; after all, it was the income on our reserve, some $76,000, which has made it possible to proceed so confidently.

I am glad to state that your Board of Trustees will be able to report that during these trying times and in the face of the greatest period of expansion of the activities of our organization, the economies established have made it possible to carry on efficiently without impairing the reserve fund which has been so consistently developed and which must be maintained.

We may congratulate ourselves on the appreciation the public has shown through its acceptance of *Hygeia*, which has been self supporting and will increase in circulation with improved business conditions.

Undoubtedly the control of newspaper publicity as to medical matters has been in the interest of the public and the means of eliminating much misinformation. It reflects credit of an unusual order on the talent and perspicacity of the editor of THE JOURNAL.

The Committee on Foods is developing contacts and generating influences which will be far reaching because the people of this country are becoming more and more interested in the endorsement of this committee, which is given only when spurious claims are eliminated from the advertisements of manufacturers of foods.

Let us not forget the necessity for a new building, as soon as the times become propitious. Our new departments of Medical Economics, the *Quarterly Cumulative Index Medicus*, the Bureau of Exhibits, the Committee on Foods, are being developed and require larger space. The services of our library have met with tremendous demands from members of our organization. We can extend these services with increased space and personnel. We should look forward to the accumulation of a great library of books which now we do not have.

Your President has realized the necessity for delay and has not advocated the development of plans for the needed new building, for it has seemed wiser to conserve our resources and not expand at this time of world-wide distress.

In a similar manner, addresses and communications from bureaus and councils should be given to the public, creating a better understanding of the purposes and desires of organized medicine to be of service to humanity.

We have gone far in this direction and have reached a high place in human relations; we cannot be static for fear of retrogression. With the loyalty and support of our membership we can go further.

Loyalty is essential throughout the organization. Our leaders should have unquestioned ability and at all times be able to express whole-heartedly the views which represent the will and crystallized opinion of the vast membership which composes this body.

Though scientific groups for special study *may* continue to exist within the organization, they should not promote individual views on economic topics and policies divergent from those of the profession as a whole. These policies are formulated in this House and become the act of constituted authority; your honorable body speaks for the American Medical Association.

For this reason, your Board of Trustees is composed of representative men who are and must be in sympathy with and interpret your wishes. They assume the responsibilities you have placed in their hands and wisely serve the entire membership of our organization, which is represented by this House of Delegates.

There will be many resolutions presented for your consideration. If the wisdom displayed in the previous sessions of the House prevails, and there is no reason to doubt this, American medicine has nothing to fear.

Those states which have so wisely returned their delegates year after year protect medicine from the vagaries of the hour. Seasoned legislators are not created in a day; it has required patriotism and a very deep interest in things which concern the welfare of medicine to bring you annually to these meetings regardless of the meeting place and the distance you must travel for such occasions. To you and to your earnestness, I bend my knee. I only wish that the medical men of this country could understand you as I do. You would have in many places a finer sense of obligation developed toward you.

While it is not necessary to remind you of the absent ones, I cannot forget that some of the stanch defenders of the faith are absent from this House. When I think of the elder statesmen who have been in this House so many years, I feel that I am treading on holy ground for I have had a personal loss in the passing of the great medical statesman Frank Billings; the faithful trustee A. R. Mitchell; the strong and responsive Vice Speaker and erudite Editor Albert E. Bulson, and the courageous and lovable J. W. Vanderslice, and others whom I did not have the pleasure of knowing so intimately. The older members of the House will, I am sure, feel the same sentiment. May we all emulate their nobility.

Again I wish to express my gratitude for your preferment. You have helped to create pictures of your friendliness and trust in my memory which I shall never forget, bringing pleasure and keen satisfaction in the opportunities I have had to serve you.

Address of President-Elect Dean Lewis

The Speaker, in presenting the President-Elect, Dr. Dean Lewis, Baltimore, said:

Your Speaker feels that the man you elected to succeed Dr. Cary as President at the close of this session possesses all the qualifications that that office exacts. He is an experienced, tried traveler; he is a bedside surgeon, intimately familiar with the practice problems of physicians. He is a student of economics and is endowed with keen discernment. He has our respect and confidence. We may safely rely on his sound leadership. Gentlemen, President-Elect Dean Lewis.

Dr. Lewis thereupon delivered the following address, which was referred to the Reference Committee on Reports of Officers:

Mr. Speaker and Members of the House of Delegates:

Physicians have suffered acutely during the depression and have rendered their services freely without complaint. Apparently during periods of depression the morbidity and mortality are less than during periods of prosperity and inflation. I am told that insurance companies have known this for years and their statistics verify the foregoing statement. We are now apparently suffering the economic consequences of peace.

One of the main problems which had a decided effect on the profession was the extensive hospitalization program which the government embarked on immediately following the war. The legislation that was passed is of such recent date that it is not necessary to review it. Non-service-connected disabilities entered largely into the program, so that finally almost 70 per cent of the cases that were hospitalized presented disabilities which had nothing to do with the service and did not even have a presumptive connection. Ochronosis, acidosis, gout and obesity were even on the list of diseases and were applied in the rating of disabilities. In the economy program that has been attempted, non-service-connected disabilities were excluded. Recent happenings indicate that much pressure has been brought to bear and that hospitalization of non-service-connected disabilities may again be attempted. If the bars are let down there will gradually be an increase in the amount of hospitalization and a return to the conditions which existed before the attempt to economize was made.

There is no argument as to the responsibility of the government in the care of the service-connected disability, nor as to the responsibility of the government to the widows and orphans of those who were sacrificed in battle. But any man discharged from the army who is able to make his living has no lien on the government. This is generally admitted. It is much more difficult to rescind legislation than it is to prevent its passage. The medical profession must still make untiring and unceasing effort to prevent the hospitalization of non-service-connected disabilities. If such continues, the foundation of medicine and the future of medicine are threatened. Hospitals already built for the care of the civilians in different parts of the country cannot carry the financial load long. I realize that not infrequently the medical profession has a bad press and that they are regarded as selfish. Any suggestions which they may make

are suspected of being based on some ulterior motive. The history and traditions of the profession refute such statements. Continued effort should be maintained to prevent a return to the system which prevailed before the economy act was considered. Personal contact with legislators is about the only method we have to prevent the continuation of a scheme which will bankrupt a government, and, if bankrupt, even the non-service-connected disability will have nothing. We will all be in the same boat, which is disabled and tossed about.

There may have been some injustices, but these could be corrected. It may be difficult for legislators to realize that it is frequently impossible for a physician to say that a disability was connected with service. This applies especially to a disease such as thrombo-angiitis obliterans, a number of cases of which are coming up for consideration. Whether these developed while the patient was in the service cannot be determined with certainty.

The different reports which have been made from time to time relating to medical care have been discussed so frequently that it is doubtful whether anything should be said about them. We all know that there are defects in medical practice. There are no systems of practice that are without fault. We have heard too much about the costs and about the distributions of the cost and not enough about the quality. Some of the criticism has come from those engaged in business who have promoted instalment buying and have encouraged people to assume obligations which are so great that those dispensing the necessities of life have had payments long deferred, and, at times, no payment has been made at all.

The losses which hospitals have suffered led them to accept different schemes, which they will be glad to cast off when the depression is over. You will hear that it has been found after a careful survey that there are more than thirty schemes which have been proposed to provide for the periodic prepayment purchase of hospital care. Some of these schemes are revolutionary in character. They are proposed and backed by propagandists and promoters who are looking for a profit. Beware of the promoters who are robed in the pure white of charity. No consideration is given to the relation between patient and physician. They have not confined their effort to the low income groups, and no attempt has been made to exclude from their scheme the final inclusive medical service with hospital care. In fact, in some of these schemes it is frankly stated that such is the ultimate aim.

It has been stated and no denial has been made that under any of the schemes which have been proposed to bring forth a medical Utopia suddenly that the mortality has not been decreased and the length of sojourn in the hospital has been doubled. The length of stay in the hospital is in marked contrast to the present system, in which an attempt is made to return the patient to life as soon as possible, with as little disability as is compatible with his sickness or injury. Hospitalization for minor illnesses has increased and malingering has become a part of the system. It is natural for a man to get some return for his money, and he will seek under such a system hospitalization to secure some return from money invested.

It has been the history of all these movements that voluntary insurance is unsuccessful, and the compulsory insurance is finally adopted.

One of the founders of a foundation which gave financial support to Committee on the Costs of Medical Care has recently made the statement that voluntary insurance is not successful and that compulsory insurance should be put in effect as soon as possible and that this type of insurance should be placed for consideration before the federal authorities.

Judging by the performance of the business world during the past two years, I should say that the medical profession has shown more ability to take care of its own business than any other profession. Physicians make mistakes, but their practice has been on a high plane and will continue on this plane if cooperation is practiced instead of competition, and if bidding for practice does not replace the system which has been in vogue since the beginning of practice.

Questionable practices regarding fees must be settled by the profession, not by legislation but by developing a profession which places service above financial gain and give to each patient a square deal. Some will say that such a statement is superidealistic, perhaps pure piffle; but during the past few years we have seen a distinct improvement in the tone of medical practice, and I believe that this will continue. There will probably always be some sharp practice. There will be some sharp practice in all professions. When it ceases we shall be translated and all the schemes suggested at the present time will pass away. The only one left to inhabit the earth at that time will be the paid secretary, promoter or propagandist, and they will be so lonesome that they will pray to be speedily destroyed.

The medical profession should take an active interest in hospitalization. Hospital planning should be undertaken. A city or town of 15,000 people should not have three hospitals. One good hospital could take care of the needs of such a community. Better have one hospital that is full and active than three partially filled. The partially filled hospital has an enormous overhead. Always expecting to be filled, it keeps a large civilian staff always expecting that it will suddenly be called on to work overtime.

Hospital construction has run riot. Many hospitals are built as memorials, and some are built to tickle the vanity of hospital architects. This point has been emphasized so much that I need say nothing. One of the many increases in the cost of medical care has been hospitalization.

In some ways the depression has rendered a great service, as it has been demonstrated that many of the mechanical aids to practice are not necessary and that the cost of medical service may be greatly reduced and the quality maintained. Sir James Mackenzie stated the case well when he said "It would be ridiculous to put a man with a cut finger through such a process [a thorough examination] and expect him to pay for it, as it would be to expect an automobile owner to have the entire machine overhauled each time he has a puncture." Simplification of medical practice should be the aim of this organization. Such a simplification will mean a limitation of specialism and the reduction of specialists. A motion providing for the recognition and listing of specialists was passed last February before the Council on Medical Education and Hospitals.

When medical education was passing through such revolutionary changes a few years ago, state licensing boards formulated some stringent and restrictive rules which many of the poor schools could not meet and they were forced to close. With the improvements that have occurred in medical education, many of the requirements might be rescinded. Schools that are recognized as giving good courses should arrange their own schedules, determine the type of internship which they think best and the number of hours which should be devoted to a subject. Their aim and desire is to graduate the highest type of student, who should be admitted to practice when graduating from such a school without examinations before state boards.

There are certain imponderables which determine one's ability to practice and these are not based on studies, schemes, curriculums or time schedules.

Address of Vice President, Rudolph Matas

The Speaker introduced the Vice President, Dr. Rudolph Matas, who addressed the House:

Mr. Speaker, Gentlemen of the House of Delegates:

In this position of vice president we have an office that has been regarded as a sinecure. I thought that before this honor was conferred on me, but I have since reconsidered. During the past year of my incumbency as vice president I have been quite busy. The first part of the year, most of the year in fact, has been spent in praying and getting all the help that I could in all the churches for the preservation of the life of the President so that I might not be brought face to face with all the problems that he has had to deal with, and I am delighted to see that through divine intervention we have preserved our President and he maintains this magnificent presence that he gives us this morning.

That is one occupation, and you see that it is a serious one. The next has been the importance of my learning something of the problems that are involved in the American Medical Asso-

ciation in the event that the dire disaster should come and the President should fail and I should have to stand in his place. That has kept me very much worried and as a consequence the habit has been beneficial, for I have learned a great deal, things that I have never suspected, because I have been limiting myself to the surgical side, and now I have learned a great deal more about the executive work and particularly about the economics of the medical profession which I knew nothing about at all. So it has been educational and it has been useful to me through the honor and the utility that it has brought to me. It has been a very profitable year in making me acquainted with problems that I had never met before.

I appreciate this opportunity. What has been said to you before covers the ground, and I feel that what I have learned during the past year is quite sufficient to make me understand that I must not abuse your patience. You have too many problems to consider for me to be occupying your time now.

I only wish to thank your very distinguished and able Speaker and particularly the gentlemen present for this opportunity of meeting face to face the solons of the medical profession of America.

REPORTS OF OFFICERS

Report of the Secretary

Dr. Olin West then presented his report as Secretary, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary, with the exception of that portion relating to an amendment to the Constitution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Resolution on Death of Dr. Mitchell

The Secretary read the following resolution from the Board of Trustees commemorating the death of Dr. Albert R. Mitchell, which was made a matter of record:

The Board of Trustees of the American Medical Association, at its session in Milwaukee, June 11, expresses its deep appreciation of the loyal, constructive and understanding efforts of Dr. Albert R. Mitchell in behalf of the physicians of this country, and its deep sense of personal loss in his death.

For seventeen years Dr. Mitchell attended, practically without a single omission, the meetings of the Board of Trustees and many of the sessions of its Executive Committee. He gave to the American Medical Association his best judgment and fought for its ideals and for the promulgation of plans for its development with an intensity that represented his whole spirit.

To the family of Dr. Albert R. Mitchell the Board expresses its sincere sympathy in the loss of this humane and socially minded physician.

Report of the Board of Trustees

The Secretary presented the report of the Board of Trustees, which was referred to the Reference Committee on Reports of the Board of Trustees and Secretary, with the following exceptions:

The report on the Bureau of Medical Economics was referred to the Reference Committee on Medical Economics; the report on the Bureau of Legal Medicine and Legislation, to the Reference Committee on Legislation and Public Relations; the report on the Bureau of Health and Public Instruction, to the Reference Committee on Hygiene and Public Health, and the resolution at the end of the Board's report, to the Reference Committee on Rules and Order of Business.

Report of the Judicial Council

Dr. George E. Follansbee, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Reports of Officers.

Report of the Council on Medical Education and Hospitals

General Merritte W. Ireland, Washington, D. C., presented the report of the Council on Medical Education and Hospitals, which was referred to the Reference Committee on Medical Education.

Report of the Council on Scientific Assembly

Dr. Irvin Abell, Kentucky, presented the report of the Council on Scientific Assembly, which was referred to the Reference Committee on Sections and Section Work.

Report of the Committee on Legislative Activities

Dr. Charles B. Wright, Chairman, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations:

Following the New Orleans meeting, Dr. West, Dr. Cary, Dr. Crockett and the chairman of the Committee on Legislative Activities were approached by influential members of the American Legion, who suggested that the members of the Association attend the meeting of the Rehabilitation Committee of the Legion, at Portland, Ore. Later Dr. West received an invitation from National Commander Stevens, asking for representation consisting of Dr. E. H. Cary, President of the American Medical Association, Dr. F. S. Crockett, a member of the auxiliary committee on veterans' affairs, and the chairman of the Committee on Legislative Activities. The group thus invited conferred in Chicago with Dr. West, and it was decided to accept the invitation. This decision was approved by the Board of Trustees.

We spent from Sept. 10 to 16, 1932, at the meeting named, where we were well received by the representatives of the American Legion. Dr. Cary was invited to speak before the convention of the Legion and did so. We conferred with the subcommittee of the Rehabilitation Committee of the Legion on Medical and Hospital Care, and on invitation we gave our views on the care of veterans, interpreting to the best of our ability the attitude of the profession. We conferred also with the medical director of the Veterans' Administration, Dr. Griffith, and the administrator, General Hines. For the first time we had an opportunity to discuss the situation with the administrator with the utmost frankness. He suggested that we meet him in Washington and go over some of the problems of the Veterans' Administration, particularly the problems relating to the cost of the care of veterans suffering from general medical and surgical disabilities.

A resolution was adopted by the Legion, asking that representatives of the American Medical Association be named to serve on the advisory committee of the National Rehabilitation Committee of the Legion, and at the request of the national commander of the Legion, approved by the Board of Trustees of the American Medical Association, Dr. F. S. Crockett and the chairman of the Committee on Legislative Activities were appointed on the advisory committee. So far there has been no meeting of the committee and no matters have been brought before us for consideration.

Following the Portland meeting we were formally invited by General Hines to a conference in Washington with the Veterans' Administration. On October 9, Dr. Cary, Dr. West, Dr. Crockett and the chairman of the Committee on Legislative Activities went to Washington and then spent two days there in conference with the administrator of veterans' affairs, and with Dr. Griffith and other representatives of the administration. At this conference General Hines outlined the program which later he recommended to Congress, calling for a very extensive reduction in the cost of the care of veterans.

Later the American Medical Association was invited to send its representatives before the Joint Congressional Committee on Veterans' Affairs. Dr. Cary and Dr. Woodward, director of the Bureau of Legal Medicine and Legislation, were delegated to appear. Their discussions are a matter of record and are accessible to any one in the published "Hearings Before the Joint Congressional Committee on Veterans' Affairs, Congress of the United States, 72d Congress, Second Session, Volume I." The Joint Committee later reported only that the control of veterans' affairs had been delegated to the President and that the situation was, therefore, in the hands of the chief executive.

Very briefly stated, the formal activities of the committee have been related above. During all the time they were going on, however, Dr. Cary was discussing the problem of veterans' care before state medical associations and other medical organizations, and the committee was carrying on a voluminous correspondence. The chairman of the committee received and answered approximately one thousand letters from various parts of the country, from individuals and groups, asking for information concerning the situation. Judging from this correspondence and from reports in the press, county and state medical associations did a great deal of active work with reference to the problem of veterans' relief.

Prior to the change in the administration at Washington, President Hoover vetoed the Independent Offices Appropriation Act, containing the appropriation for the Veterans' Administration for the fiscal year 1933-1934. He thus left the slate clean for President Roosevelt. President Roosevelt, immediately following his inauguration, took the definite action with respect to this matter that is now familiar to all. It is unnecessary to call your attention to the efforts that are now being made to induce him to modify the action he took to effect economies in the cost of the Veterans' Administration. Free clinics have been established for veterans in various communities by the American Legion, and, on the basis of the observations and experiences of these clinics, demands are being made for the continuance of hospitalization and medical care for all classes of veterans. In addition to this, local communities and state legislatures have protested against the burden that has been thrown on them in the care of needy veterans.

As an illustration of the local interest in this problem, may I call your attention to House Joint Resolution 58, passed by the legislature of the state of Illinois, memorializing the Congress of the United States to include in the independent offices appropriation bill such provisions and appropriations as will permit the continuation of contracts between the federal government and the state to meet the emergency in the state of Illinois. The preambles to the resolution describe the situation as follows:

WHEREAS, Since the ending of the World War, due to an insufficient number of beds available for the care and treatment of mentally disabled veterans within federal hospitals, Illinois state facilities have been utilized under contract with the Veterans' Administration at a cost much less than the operating cost of the same comparable federal beds, and as a result of which the state of Illinois has received from one hundred fifty to two hundred thousand dollars annually; and

WHEREAS, There are now being cared for in Illinois state institutions 1,050 mentally disabled veterans committed by various county courts, and instructions issued by the Veterans' Administration indicate existing contracts will become a responsibility of the taxpayers of the state of Illinois; and further, there are thousands of mentally disabled veterans in Illinois not confined in any institutions, whose only means of livelihood for the most part will also be taken away and the balance greatly reduced, which will obviously cause a great number of new commitments, thereby forcing the state of Illinois to appropriate four hundred thousand dollars, or more, for the biennium to meet the cost of care which these unfortunate veterans deserve, or to refuse such care.

The legislatures of other states have initiated similar action.

To illustrate the trend of congressional opinion, I call your attention to a bill, Senate 185, introduced by Senator George. This bill proposes to provide, through an amendment to an act already in force, for the "Domiciliary care to all persons honorably discharged from the Army, Navy, or Marine Corps of the United States where they are suffering with permanent disabilities, tuberculosis or neuropsychiatric ailments and *medical and hospital treatment for diseases or injuries.*" Just how far reaching the proposed act would be, cannot at this time be determined.

Just how many veterans need care who cannot obtain it is not known. We have no facts on which to determine the number, although we have fairly definite opinions. This is a matter which should receive careful consideration by our state and county medical organizations. We urge that they interest themselves and cooperate in the readjustments in caring for needy veterans, made necessary by recent congressional and presidential action. We should obtain as definite information as is ascertainable concerning the extent of the problem, so that we may be in a position to advise properly as opportunities arise.

To conclude the discussion on veterans' affairs, it is our opinion that the American Medical Association should support the President of the United States in his exercise of the authority that has been conferred on him. The Congress has granted him authority to determine the nation's policy in regard to veterans. He has acted courageously, according to his best judgment. If events prove that he has made an error of judgment, he will, we believe, promptly correct that error on his own initiative. Your committee deplores the attempts that have been and are being made to deprive the President of the authority that has been granted to him.

We believe that it is the duty of the government to provide medical and hospital service at government expense for the relief and cure of such disabilities of veterans as are of service origin. This service could be rendered in government hospitals and homes, or elsewhere, in whatever manner is of the greatest benefit to the disabled veterans. The President has promised such care to veterans of this class. We believe further that care of this type should be provided at government expense for veterans disabled by neuropsychiatric and tuberculous disorders and for veterans totally disabled by other chronic diseases, and by injuries, when those veterans are unable to provide for themselves. Finally, however, we are of the opinion that medical and hospital service for the treatment of acute medical and surgical diseases of veterans should be provided in all cases by the communities in which the veterans reside, such diseases being obviously not of service origin. Veterans in such cases should be treated in exactly the same manner as are other members of the community in which the veteran resides. We believe that this course is in the best interests of the veterans themselves.

We must recognize that injustice and inequalities incorporated into the law, on the demands of special groups and individuals —in many instances not at the request of the American Legion —over a period of years, by congresses too liberal with the taxpayers' money cannot be corrected overnight. We believe that the President will do his best and that he should be supported. We recommend that he be advised of the attitude of the American Medical Association with respect to this matter.

Changing the subject, we call attention to the excellent work that is being done by the Bureau of Legal Medicine and Legislation. Exact information is always available through this bureau on legal aspects of the practice of medicine, and on legislative activities, both state and national. A brief résumé of the activities of this bureau was published in the April number of the AMERICAN MEDICAL ASSOCIATION BULLETIN.

Finally, may we call attention to another matter that is, we believe, of vital interest to the public and the medical profession: that is, the corporate practice of medicine. The courts in a number of states have held that the corporate practice of medicine is unlawful. If this can be legally established throughout the country, it will do a great deal now and in the future to protect the public and the medical profession from exploitation. We urge delegates to stimulate interest in this matter in their respective state organizations. Exact information concerning it is available in the Bureau of Legal Medicine and Legislation.

Respectfully submitted.

COMMITTEE ON LEGISLATIVE ACTIVITIES.
CHARLES B. WRIGHT, Chairman.

(To be continued)

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., Chicago daylight saving time, which is one hour faster than central standard time, over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

June 27. Holiday Traffic Tragedies.
June 29. Vacation on Tour.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

July 1. Look Out for Sunburn.

Education of the Public.—Education for a higher allotment of the budget to medical care carried out directly by the physician is largely ineffective, for under the circumstances he is assumed to be a special pleader. This reaction is always aroused whenever the profession attempts through legislation to raise the standards of licensure or to enforce public health measures, and frequently blocks such attempts. Education of the public is preferably, then, a responsibility of the public health services and should be recognized as such.—Harvey, S. C.: Oikonomia Medika, *Yale J. Biol. & Med.* **5**:323 (March) 1933.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Personal.—Dr. Benjamin D. Luck, Pine Bluff, was recently made a member of the state board of nurse examiners, succeeding Dr. Mahlon D. Ogden, Little Rock.——Dr. Allen B. Jemison has been elected director of the Jefferson County Health Department, succeeding Dr. George A. Hays, resigned.

Society News.—At the meeting of the First Councilor District Medical Society in Piggott, May 24, speakers included Drs. Joel C. Land, Walnut Ridge, on asthma; William T. Black, Memphis, Tenn., uterine bleeding; Robert Lyle Motley, Memphis, heart disease, and Junius B. Futrell, Rector, obstetric complications.

CONNECTICUT

Professor Ferris Resigns.—Dr. Harry Burr Ferris has resigned as professor of anatomy and head of the department at Yale University School of Medicine, a position he has occupied since 1895. Dr. Ferris, who is 68 years of age, received his medical degree from Yale University School of Medicine in 1890. He became an instructor in anatomy at the medical school, in 1892 assistant professor, and in 1895 professor, and was appointed E. K. Hunt professor of anatomy in 1897. Dr. Ferris will be succeeded at Yale by Edgar Allen, Ph.D., dean of the University of Missouri School of Medicine, Columbia, July 1.

FLORIDA

Reorganization of Health Department.—Reorganization of the Tampa Health Department, which was recently recommended to the city board of aldermen, was to have been effected, June 1, with the adoption of a new city budget. Service of part time physicians on the staff will be discontinued, and two physicians will be employed on a full time basis. A net saving of $5,120 a year under the new plan is anticipated.

Whitehurst Sentenced.—Tyree C. Whitehurst was recently sentenced to five years in the federal prison at Atlanta, following his conviction of having used the mails in connection with a scheme to represent himself as a doctor, it is reported. In pronouncing sentence, Judge Ackerman is said to have stated:

"In this case I am convinced that you are a professional abortionist and under the circumstances I feel it my duty to the community to put you where you cannot continue this nefarious practice."

Whitehurst has also been convicted of practicing medicine without a license (THE JOURNAL, Jan. 24, 1931, p. 277). At that time he was given a sentence of a year and a day in the state prison at Raiford. Whitehurst claimed at one time that he graduated from the University College of Medicine, Richmond, Va., in 1898, and that he was licensed in Florida in 1915. Examination of the alumni list showed that he was not a graduate of the university college or of the Medical College of Virginia, which absorbed the former institution in 1913. There is said to be no record that a Florida license was ever issued to him.

ILLINOIS

Physicians Honored.—The Christian County Medical Society gave a dinner, May 31, in honor of Drs. George J. Rivard, Assumption, Campbell A. Stokes, Edinburg, and Joseph F. Miller, Palmer, veteran members of the society in point of service. Dr. Rivard has spent fifty-two years in the practice of medicine in the county, Dr. Stokes fifty-one years, and Dr. Miller forty-five years.

Society News.—Dr. Horace W. Soper, St. Louis, addressed the St. Clair County Medical Society, June 1, on "Diagnosis of Diseases of the Rectum and Colon."——Dr. Oscar T. Schultz, Evanston, among others, addressed a joint meeting of the Vermilion County Medical Society and the Vermilion Bar Association, Danville, May 2, on "Relation of Medicine to Law in the Administration of Justice."——Dr. James Curtis Lyter, St. Louis, addressed a recent meeting of the Union County Medical Society at Anna on diseases of the coronary arteries.——Dr. Frank H. Lahey, Boston, addressed the Winnebago County Medical Society, Rockford, June 13, on "Malignancy of the Colon and Rectum."

Milk-Borne Epidemic.—Thirteen cases were involved in the only epidemic in Illinois in 1932 that was directly attributable to contaminated milk, according to *Illinois Health Messenger*. The disease, an infection for the most part fairly characteristic of scarlet fever was limted strictly to users of one unpasteurized milk supply. In one family of three members, two who drank only pasteurized milk escaped the disease, while the other member who used raw milk from the dairy in question became ill. Of the thirteen patients, ten had a rash fairly typical of scarlet fever. Most of them had some degree of sore throat. It was officially reported that an employee at the dairy had scarlet fever. The cow yielding milk with positive evidence of hemolytic streptococci was removed from the herd and the sale of milk from the dairy was discontinued temporarily.

Chicago

Faculty Changes at Loyola.—Recent appointments to Loyola University School of Medicine include the following:

Gregory R. Waters, clinical assistant in dermatology.
Herbert E. Landes, clinical professor in genito-urinary surgery.
Chester H. Warfield, assistant professor in the department of medicine.
Irvin F. Hummon, assistant in anatomy.
Salvatore J. Nigro, clinical assistant in gynecology.
Irving Francis Barnett, clinical instructor in ophthalmology.
Jerry J. Kearns, clinical assistant in surgery.

Society News.—Dr. Roberto Alessandri, director of surgery, Royal University of Rome, lectured on "Surgery of the Stomach" at Columbus Hospital, June 10; a dinner in his honor preceded the talk.——Dr. E. Gorter, Leiden, Holland, addressed the Chicago Pediatric Society, May 20, on "Copper and Anemia in Childhood."——Dr. Anton J. Carlson spoke, among others, before the Chicago Society of Internal Medicine, May 22, on "Endocrinology in the Laboratory and in the Clinic."——Drs. Aaron E. Kanter and Perry J. Melnick presented a paper on "Thecomas of the Ovary" before the Chicago Gynecological Society, June 16, and Drs. William M. Spear, Oakdale, Iowa, and Henry C. Hesseltine, one on "Significance of Menstrual Disturbances in Pulmonary Tuberculosis."

Two Millions for a Dental Clinic.—More than $2,000,000 has been bequeathed to the University of Chicago by the late W. G. Zoller to establish and maintain a free dental dispensary, according to the Chicago *Tribune*. The income will be used by the university "for the purpose of equipping and maintaining dispensaries and laboratories and to supply competent and skilful dental service, including diagnostic aids to the needy and poor, free of charge, in such manner that the greatest number of people may secure skilful treatment to enable them to be relieved, and to prevent the numerous ills which result from neglect of the teeth." Other benefactions include $10,000 each to the Central Free Dispensary and the Home for Destitute and Crippled Children, and $5,000 to the Chicago Home for Incurables. Mr. Zoller was formerly vice president and treasurer of the Bell and Zoller Coal Company.

INDIANA

Society News.—Dr. Lewis J. Pollock, Chicago, spoke before the St. Joseph County Medical Society in South Bend, May 31, on "Common Conditions Met in Clinical Neurology."——At a meeting of the Porter County Medical Society in Valparaiso, May 31, Dr. Arthur G. Miller, Hobart, lectured on "Female Sex Hormones."——The Jasper-Newton Counties Medical Society heard Dr. Harry E. Mock, Chicago, discuss "Traumatic Head Injuries," at its meeting in Kentland, May 26.——Dr. John Sater Nixon, Indianapolis, addressed the Morgan County Medical Society, May 17, on "Early Diagnosis of Acute Appendicitis."

IOWA

Society News.—Drs. Francis L. Lederer and Frederick H. Falls, Chicago, addressed the Dubuque County Medical Society at Dubuque, May 9, on "Modern Concepts in the Diagnosis and Treatment of Sinus Conditions" and "Pregnancy and Tuberculosis," respectively.——The Black Hawk County Medical Society, Waterloo, was addressed, May 16, by Dr. Cyrus W. Rutherford, Iowa City, on squint, and Dr. Caryl L. Nelson, Waterloo, on appendicitis in childhood.

MARYLAND

Lectures on History of Medicine.—Dr. Henry E. Sigerist, director, Institute of the History of Medicine, Johns Hopkins University School of Medicine, Baltimore, opened a series of lectures at the University of Maryland, March 16, on the history of medicine. Dr. Owsei Temkin and Dr. John Rathbone Oliver, associates in the history of medicine, Johns Hopkins, spoke, March 23 and 30, respectively. Dr. Oliver also delivered lectures in this series on consecutive Thursdays through May 4.

Society News.—Dr. Arthur G. Barrett, Baltimore, was installed as president of the Maryland Academy of Medicine and Surgery for his sixteenth consecutive term at its annual meeting, April 18. Dr. Thomas B. Futcher, among others, spoke on "The Pituitary Gland and Its Diseases."——Dr. William Fletcher Shaw, professor of gynecology and obstetrics, University of Manchester, England, addressed the gynecologic and obstetric section of the Baltimore City Medical Society, May 11, on maternal mortality.

Advisory Committee on Sanitation.—The appointment of an advisory committee on sanitation to serve the Baltimore Health Department, especially on matters of environmental hygiene, has been announced. Dr. William H. Howell, director emeritus of the Johns Hopkins School of Hygiene and Public Health, is chairman of the committee. Wilmer H. Schulze, who since 1929 has been chief of the division of chemical technology, was made director of the new bureau of environmental hygiene in the health department.

Personal.—Dr. William H. Wilmer, director of the Wilmer Institute of Ophthalmology, Johns Hopkins University School of Medicine, Baltimore, received, March 25, the decoration of the Angelo Secchi Academy of Science from Georgetown University, Washington, D. C., where, for nineteen years, he was a member of the faculty. Presentation was made on the university's celebration of Founders Day.——Dr. Adolf Meyer, director of the Phipps Psychiatric Clinic of Johns Hopkins Hospital, Baltimore, delivered the fourteenth Maudsley lecture of the Royal Medico-Psychological Association in London, May 17. His subject was "Psychiatry and Mental Hygiene."

MASSACHUSETTS

Campaign to Reduce Appendicitis Deaths.—June 12 opened a week's campaign of education in Massachusetts to reduce deaths from appendicitis. In Philadelphia, mortality from acute appendicitis was materially reduced following a campaign of education. Cooperating in the Massachusetts campaign were the state department of health, the state pharmaceutical association, the Boston Retail Druggists' Association, and the public health committee of the Massachusetts Medical Society.

Portraits Presented.—At a dinner, May 5, portraits of Dr. Harvey Cushing and Dr. Henry A. Christian were presented to Harvard University Medical School and Peter Bent Brigham Hospital, Boston, respectively. Dr. Cushing recently retired as Moseley professor of surgery at the university, and Dr. Christian, professor of the theory and practice of physic at the university, is physician-in-chief to the hospital. He was dean of the medical school from 1908 to 1912. The dinner was attended by the faculty of the university and the governing boards of both university and hospital.

MINNESOTA

Personal.—Dr. Albert E. Olson, Duluth, has been appointed a member of the board of regents of the University of Minnesota.——Dr. Edward A. Meyerding, St. Paul, has been promoted to the grade of colonel in the medical reserve corps.

Basic Science Law Violations.—Mitchell Jurdy, "naturopathic physician and physical culturist," was sentenced, recently, to serve six months in the Minneapolis Workhouse, for practicing healing without a basic science certificate. As this was the second offense of Jurdy, the sentence was not suspended. In 1932 Jurdy pleaded guilty to a similar charge, having treated a patient with epilepsy, it was claimed. In the recent instance, Jurdy was said to have treated a patient suffering with Hodgkin's disease. C. W. Brunelle, alias "Chief Little Cloud," pleaded guilty at Faribault to a charge of practicing healing without a basic science certificate, March 30. "Chief Little Cloud" is a half breed Chippewa Indian and is employed by the city of Minneapolis as a garbage collector. During his spare moments, and particularly on Saturday afternoons and Sundays, he has been making a specialty of driving down to Faribault to see a number of "patients," the state board reports. In the present instance he was alleged to have diagnosed the ailment of a woman as "bone rheumatism" and left some medicine, making a charge of $7.

MISSOURI

Dr. Conley Appointed Dean.—Dr. Dudley S. Conley, Columbia, professor of surgery, University of Missouri School of Medicine, has been appointed dean of the institution to succeed Edgar Allen, Ph.D., at the beginning of the next school year. Dr. Conley, who graduated from Columbia University College of Physicians and Surgeons, New York, in 1906, has been connected with the University of Missouri since 1919. Dr. Allen will become professor and head of the department of anatomy at Yale University School of Medicine, New Haven. He has been dean of Missouri since 1930 and professor of anatomy since 1923. From 1919 to 1921 he was instructor and associate in anatomy, Washington University School of Medicine.

New Health Officer and Hospital Commissioner of St. Louis.—Dr. Joseph F. Bredeck assumed the duties of health commissioner of St. Louis, April 20, replacing Dr. Max C. Starkloff, who served in the position for thirty-two years. Dr. Bredeck graduated from Washington University School of Medicine in 1914; he was licensed in the same year. In 1917 he received the degree of doctor of public health from the University of Pennsylvania. Dr. Ralph L. Thompson, since 1907 professor of pathology, St. Louis University School of Medicine, was recently appointed hospital commissioner of St. Louis, succeeding Dr. Curtis H. Lohr. Dr. Thompson is also director of the National Pathological Laboratory in St. Louis. He graduated from Harvard University Medical School in 1900. For three years previous to his appointment in 1929 as hospital commissioner, Dr. Lohr was superintendent of the isolation hospital (THE JOURNAL, June 15, 1929, p. 2029).

NEW JERSEY

Personal.—Dr. Jacob Allen Patton, Newark, medical director and second vice president of the Prudential Life Insurance Company, will retire from active duty with the organization, July 1, after thirty-eight years of service, and will make his home in California. Dr. Patton, a graduate of Rush Medical College, Chicago, became associated with the Prudential company in 1895.

NEW MEXICO

State Medical Election.—Dr. Henry A. Ingalls, Roswell, was inducted into office as president of the New Mexico Medical Society at its annual meeting, May 19, and Dr. Charles F. Milligan, Clayton, was named president-elect. Dr. Leo B. Cohenour, Albuquerque, was reelected secretary. The next annual session will be held in Las Vegas in May, 1934.

NEW YORK

Personal.—Dr. James L. McCartney, director of classification, New York State Department of Correction, has been awarded a grant of $1,000 by the Thomas W. Salmon Memorial Committee of the New York Academy of Medicine to investigate the classification of prisoners and draw up a handbook on classification for use in prisons.

Dr. Chapin Given University Medal.—At the commencement exercises of Columbia University, June 6, Nicholas Murray Butler, president, presented the University Medal for excellence to Dr. Henry Dwight Chapin, emeritus professor of diseases of children, New York Post-Graduate Medical School and Hospital, New York. The medal was awarded to Dr. Chapin in recognition "of his outstanding contribution to problems relating to the care of children."

Letchworth Village Nears Completion.—Appropriate ceremonies marked the laying of the cornerstones for eleven new buildings at Letchworth Village, June 14. The completion of these structures, which will be within a year, will make this the largest state institution for mental defectives, according to the *State Charities Aid Association News*, and will complete the original building program proposed in 1908. With a total of ninety-three buildings in use, covering 2,234 acres of ground, there will be accommodations for 3,500 mentally defective children. Dr. Charles S. Little, the first superintendent, is still in charge of the institution.

Anniversary of Antituberculosis Campaign.—The twenty-fifth anniversary of the antituberculosis campaign in upstate New York was observed, June 8, at the annual Conference of State and Local Committees on Tuberculosis and Public Health of the State Charities Aid Association. Among the speakers were Gov. Herbert H. Lehman, who spoke on "The State's Interest in the Control of Tuberculosis," and Dr. Thomas Parran, Jr., state health commissioner, on "Common Interests Between the Control of Tuberculosis and Syphilis." In 1908, tuberculosis was said to be the greatest single cause of death in the commonwealth, with a rate of 151.9 per hundred thousand of population. A rate of 59.2 was recorded in 1932, a reduction of 61 per cent.

New York City

Annual Etching Exhibition.—The Haden Etching Club, composed of dentists and physicians whose hobby is etching, held its second annual exhibition at the Kennedy Galleries, May 15-27. The club is named in honor of Sir Francis Sey-

mour Haden, a surgeon and an etcher. Edward Kennedy, D.D.S., was the prize winner for his etching and aquatint, "Gulls." Other exhibitors included:

Dr. Hermann Fischer	Dr. Joseph F. Saphir
Dr. Leigh Harrison Hunt	David Schoen, D.D.S.
Dr. Harris P. Mosher, Boston	Walter C. Sinnigen, D.D.S.
Dr. Meyer M. Melicow	Bernhard W. Weinberger, D.D.S.
Dr. Henry Minsky	Dr. Henry Smith Williams
Dr. Benjamin F. Morrow	Harold S. Vaughan, M.D., D.D.S.

Only two of the exhibitors, Charles Berger, D.D.S., and Dr. Laurance D. Redway, depicted medical subjects in their compositions.

Department of Forensic Medicine.—The establishment of a department of forensic medicine at the University and Bellevue Hospital Medical College has been announced. Medical examiners and toxicologists will be trained in the department, which is considered an initial step toward establishing a system of scientific crime detection in this country to correspond with the system of medicolegal institutes of continental Europe. Dr. Charles Norris, chief medical examiner of New York, will head the department as professor of forensic medicine, and Dr. Harrison S. Martland, chief medical examiner of Essex County, Newark, N. J., has been named associate professor. Other members of the department will include Alexander O. Gettler, Ph.D., city toxicologist, who will become professor of toxicology; Dr. Douglas Symmers, director of laboratories at Bellevue Hospital, who will be professor of gross pathology; Dr. Armin V. St. George, assistant professor of gross pathology, and Dr. Thomas A. Gonzales, deputy chief medical examiner of New York, assistant professor of forensic medicine. The curriculum planned by the new department will include a required short course to fourth year medical students, covering salient points as to what constitutes medical examiners' cases, proper signing of death certificates, and testimony in court; an optional laboratory course to fourth year students, consisting of a month's work in the medical examiner's office assisting at necropsies; a graduate course of three years in the office of the medical examiner leading to a degree, and a graduate course of two years in toxicology leading to a degree. The required course for seniors will consist of six lectures. Laboratory work for fourth year students and graduates will include attendance at necropsies, the taking of postmortem notes, and laboratory work in connection with microscopic examination of sections and bacteriologic examinations.

NORTH DAKOTA

State Medical Election.—Dr. Jesse W. Bowen, Dickinson, was inducted into office as president of the North Dakota State Medical Association at its annual meeting, June 1-2, in Valley City. Dr. Clyde E. Stackhouse, Bismarck, was named president-elect. Other officers elected are Drs. Archibald D. McCannel, Minot, and William A. Gerrish, Jamestown, vice presidents; Dr. William W. Wood, Jamestown, treasurer, and Dr. Albert W. Skelsey, Fargo, reelected secretary.

OHIO

Personal.—George B. Ray, Ph.D., associate professor of physiology, Western Reserve University School of Medicine, Cleveland, has been appointed professor of physiology and pharmacology at Long Island College of Medicine, succeeding Dr. John C. Cardwell, retired.——Dr. Benjamin H. Biddle, Sugar Grove, has been elected health commissioner of Fairfield County, succeeding Dr. William R. Coleman, Bremen.——Dr. Raymond T. Holzbach has been appointed health commissioner of Salem, succeeding Dr. Thomas T. Church.

Fifty Years in Practice.—The Miami County Medical Society honored Dr. Gainor Jennings, West Milton, with a dinner, May 5, in recognition of his fifty years of medical practice. In addition to presenting him with a floral tribute, the society adopted a resolution eulogizing Dr. Jennings. Dr. Jerold K. Hoener, Dayton, was the guest speaker on "Occiput Posterior Position." Other physicians recently honored for completion of many years in the practice of medicine are Drs. Albert A. Brooks, Orrville, fifty-one years; Henry E. Beebe, Sidney, sixty years; William H. Hawley, College Corner, forty-eight years; J. Eugene Baker, Marion, fifty years, and Robert G. Steele, Melmore, fifty years.

Part Payment Plan.—A diagnostic and consulting service on a part pay basis for persons unable to meet full charges was placed in operation by the Academy of Medicine of Cleveland, June 5, following a study by the committee on economics. A card, indicating the percentage of payment he can afford, will be given the patient following an investigation of his financial condition, for which a fee of fifty cents is charged. He will then be referred back to his physician or to a specialist selected by him from a list of the academy's members. The academy will not refer any patients to specialists. Should a patient apply on his own volition for a rating, he will be referred to his family physician. If he has none, he will be asked to make his own selection from a list of general practitioners in his own locality furnished by the academy. The specialist will determine from the information on the card the percentage of his regular fee to be charged. The academy will furnish the specialists with form postcards to be filled out and returned.

Society News.—Dr. William E. Thompson, Bethel, 98 years of age, was the guest of honor at a meeting of the Clermont County Medical Society, May 17; he reviewed the changes in medicine and medical practice during his seventy years in the profession.——The Logan County Medical Society held a round table on blood deficiency diseases, May 5, at Bellefontaine.——Speakers before the May meeting of the Ashtabula County Medical Society were Drs. Jacob E. Tuckerman on "Chronic Malaria," and Clarence H. Heyman, both of Cleveland, "Disabilities at the Knee Joint."——A recent meeting of the Lorain County Medical Society at Lorain was addressed by Dr. Hubert C. King, Lakewood, on "Heart in Toxic Goiter."——The Mahoning County Medical Society and the Mahoning County Bar Association will be addressed, June 27, by Attorney F. R. Hahn, Youngstown, and Dr. Edwin A. Hamilton, Columbus, on medicolegal considerations from the standpoint of the lawyer and physician, respectively.——Dr. Harry Lee Huber, Chicago, addressed the Toledo Academy of Medicine, June 2, on "Development of Pollen Therapy."

Steuer Prize Awarded.—Western Reserve University School of Medicine recently awarded the Steuer Prize in anatomy to William B. Seymour, Jackson, Mich., a sophomore, for his volunteer study, last summer, of bone scars revealed by the x-rays in the limb bones of children, caused by piling up of lime when illness, dietary disturbances or shock temporarily stops growth. By examining 3,700 records, Seymour was able to chart the growth of the limb bones from infancy till completion of growth at about 18. His study also establishes that growth of the limbs reaches maximum at the age of 14. The Steuer Prize is a memorial to the late Dr. Herbert S. Steuer, a graduate of the college in 1921, whose death occurred in the Cleveland Clinic disaster in 1928. Frederick Robert Mautz, Marion, senior, was awarded two prizes at the commencement, June 14, when he received his degree of doctor of medicine. One, the gift of Dr. Edwin C. Garvin, class of 1894, is the income from a fund, given annually, to a member of the fourth year class who shows best knowledge, theoretical and practical, of obstetrics. The second is the senior prize in surgery, conferred annually on the student in the graduating class who has shown best knowledge and greatest ability in surgery during his undergraduate course. This is the gift of Dr. Elliott C. Cutler, formerly professor of surgery at the school and now occupying a similar position at Harvard University Medical School, Boston.

OREGON

Personal.—Dr. Wilford H. Belknap, Portland, was elected president of the alumni association of the University of Oregon Medical School at the annual session, March 8. Dr. Birchard A. Van Loan, Portland, succeeded Dr. Belknap as secretary.——Dr. and Mrs. David M. Brower, Ashland, celebrated their fiftieth wedding anniversary, recently.

PENNSYLVANIA

Society News.—Dr. Armitage Whitman, New York, gave an address before the Huntingdon County Medical Society at Huntingdon, June 8, on infantile paralysis.——At a meeting of the Lycoming County Medical Society in Williamsport, June 9, Drs. Louis H. Clerf and Charles Mazer, Philadelphia, spoke on "Relation of Bronchoscopy to General Medical Practice" and "Phases of Endocrine Therapy," respectively.——A symposium on genito-urinary disease was presented before the Dauphin County Medical Society, June 6, by Drs. John Oeslager, Jr., John L. Lanshe and Samuel Grossman.——At a meeting of the Harrisburg Academy of Medicine, May 16, Dr. Charles M. Wainwright, Jr., Baltimore, spoke on "Bromide Poisoning."——Dr. George W. Crile, Cleveland, will be the guest speaker before the annual meeting of the Lehigh Valley Medical Society, July 31, in Mount Pocono.

Philadelphia

Dr. Riesman Resigns as Professor.—Dr. David Riesman resigned recently as professor of clinical medicine at the University of Pennsylvania School of Medicine, a position he has occupied since 1912. He will continue as professor of

the history of medicine at the institution. Dr. Riesman's last lecture as professor of clinical medicine dealt with a physician's conduct in relation to his fellow practitioners and his duties as a citizen.

Dr. Meeker Honored.—George H. Meeker, LL.D., dean of the Graduate School of Medicine, University of Pennsylvania, since he established it in 1918, was honored at a dinner, June 1. A portrait of Dr. Meeker was presented to the university by Dr. George Morris Piersol on behalf of those in attendance and accepted by Dr. Alfred Stengel, vice president in charge of medical affairs. Josiah H. Penniman, LL.D., provost of the university, was among the speakers, and Dr. George E. de Schweinitz, emeritus professor of ophthalmology, presided. Dr. Meeker also founded the department of pharmaceutical chemistry at the university in 1907 and continued as its dean to 1916, since which time he has been professor of chemistry at the University of Pennsylvania School of Medicine.

Professors Appointed.—Drs. George M. Coates, John Claxton Gittings and Isaac Starr, Jr., were recently appointed to professorships at the University of Pennsylvania School of Medicine. Dr. Coates succeeds the late Dr. George Fetterolf as professor of otolaryngology. He is at present professor of otorhinology in the university graduate school of medicine and in addition is chief of the department of otolaryngology at Presbyterian and Abingdon Memorial hospitals, associate surgeon to the ear, nose and throat department of Pennsylvania Hospital, and consulting surgeon to several other institutions. He is secretary of the American Laryngological Association. Dr. Gittings, formerly professor of pediatrics, returns as the first regular incumbent of the William H. Bennett professorship of pediatrics. He has been president of the Philadelphia Pediatric Society and the American Pediatric Society and is now professor of pediatrics in the graduate school of medicine. Dr. Starr was appointed instructor in 1922, has since served as associate in medicine and assistant professor of clinical pharmacology, and now becomes the first Milton B. Hartzell professor of research therapeutics. The chair was endowed by the late Dr. Hartzell, who was professor of dermatology in the school of medicine. The new professors are graduates of the University of Pennsylvania.

Hospital Purchases Franklin Manuscript.—The original manuscript of an inscription written by Benjamin Franklin for the cornerstone of the Pennsylvania Hospital, which was recently discovered in Germany and acquired by A. S. W. Rosenbach, Philadelphia bibliographer and dealer in rare books, has been bought by the hospital. Funds for the purchase were provided by contributors to the hospital through Dr. Francis R. Packard, who presented the manuscript at the annual meeting of contributors, May 1. The inscription reads:

In the Year of Christ
1755
George the Second happily reigning
(For he sought the happiness of his People)
Philadelphia flourishing
(For its Inhabitants were publick-spirited)
This Building
By the Bounty of the Government
And of many private Persons,
Was piously founded,
For the Relief of the Sick and
Miserable.
May the God of Mercies
Bless the Undertaking!

It is not known how the document happened to be in Germany. It was at one time in the possession of Robert Vaux, who was a manager of the hospital from 1823 to 1834. Franklin was the founder of the Pennsylvania Hospital, one of its designers and the author of two books about it.

TENNESSEE

Personal.—Dr. Howard M. Francisco, Bolivar, has been appointed superintendent of Eastern State Hospital, Lyons View, succeeding Dr. R. E. Lee Smith.——Dr. Harley W. Qualls, Memphis, was recently elected secretary of the Tennessee State Board of Medical Examiners to succeed the late Dr. Alfred B. DeLoach.

Reorganization of State Health Department.—Activities of the Tennessee State Department of Health have been necessarily curtailed because of the reduction of almost 50 per cent in the appropriation for public health work. In the reorganization of the department, the services suffering the greatest reduction include those on tuberculosis and malaria control and trachoma work. Dental hygiene has been completely eliminated and health education and public health nursing have been reduced to a minimum.

TEXAS

Hospital News.—A new U. S. Marine Hospital at Galveston was dedicated in March; the hospital plant includes eight buildings.

Health at El Paso.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities, with a total population of 37 million, for the week ended June 10, indicate that the highest mortality rate (19.1) appears for El Paso, and the rate for the group of cities as a whole, 11.1. The mortality rate for El Paso for the corresponding period last year was 13.7, and for the group of cities, 10.7. The annual rate for eighty-five cities for the twenty-three weeks of 1933 was 11.7, as against a rate of 12.2 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

VIRGINIA

Portraits Unveiled.—Portraits of Dr. Lewis Webb Chamberlayne, first professor of materia medica and therapeutics, and Dr. Richard L. Bohannan, first professor of obstetrics and diseases of women and children, were unveiled during commencement week at the Medical College of Virginia, Richmond, recently.

WEST VIRGINIA

State Medical Election.—Dr. Roy B. Miller, Parkersburg, was named president of the West Virginia State Medical Association at its annual meeting, May 22, to serve from Jan. 1, 1934. Dr. Delivan A. McGregor, Wheeling, now fills the presidency. Mr. Joe W. Savage, Charleston, was reelected executive secretary. The next annual session will be held at Huntington in May or June, 1934.

Dr. McClue Appointed State Health Commissioner.—Dr. Arthur E. McClue, New Cumberland, has been appointed health commissioner of West Virginia to succeed Dr. William T. Henshaw, whose unexpired term would end May 31, 1935. Dr. McClue is 35 years of age and a 1925 graduate of the University of Louisville School of Medicine, Louisville. He was formerly health officer of Hancock County. Dr. Henshaw had been state health commissioner since 1921.

Heart Association Organized.—The West Virginia Heart Association was formed at a meeting of the heart committee of the West Virginia Medical Association, May 22. Dr. Oscar B. Biern, Huntington, was made president; Dr. George H. Barksdale, Charleston, vice president, and Dr. Raphael J. Condry, Elkins, secretary. Objectives of the newly formed society will be to gather and to disseminate information on the prevention and care of heart disease and develop and apply a uniform classification and study of heart disorders. When certain requirements have been accomplished, the society hopes to become affiliated with the American Heart Association.

Society News.—Dr. James E. Hubbard addressed the Cabell County Medical Society in Huntington, May 11, on "Cancer of the Buccal Mucous Membrane," and Dr. Chauncey B. Wright, "Fracture of the Jaw."——The Kanawha Medical Society recently heard Drs. Hugh A. Bailey and Robert King Buford, Charleston, discuss "Newer Methods in the Postoperative Management of Peritonitis Following Appendicitis" and "Borderline Hyperthyroids," respectively.——At a meeting of the Mercer County Medical Society in Princeton, recently, Dr. John E. Cannaday, Charleston, spoke on "Surgical Aspect of the Gallbladder," and Dr. Pat A. Tuckwiller, Charleston, "Jaundice."——Dr. Moritz F. Petersen, Charleston, among others, spoke on "Diarrhea in Infancy" before the Fayette County Medical Society, May 9.——The Logan County Medical Society was addressed, May 17, by Drs. George F. Grisinger and Tyler R. Boling, both of Beckley, on "Collapse Therapy in Tuberculosis" and "Tuberculous Laryngitis," respectively.——Dr. Louis J. Karnosh, Cleveland, addressed the Ohio County Medical Society, Wheeling, June 2, on "A Psychiatrist's Anthology."

WISCONSIN

Personal.—Dr. Elmer Klein, Baltimore, has been appointed director of the Milwaukee County mental hygiene clinic, succeeding Dr. Roy E. Bushong, resigned.——Dr. Harry E. Purcell was recently named president of the board of health of Madison.

Society News.—Dr. Arthur W. Rogers, Oconomowoc, was guest speaker before the Brown-Kewaunee County Medical Society, April 19, on mental disease.——Judge William E. Hailey discussed legislative problems concerning social medi-

cine before the April meeting of the Douglas County Medical Society.——At a meeting of the Eau Claire and Associated Counties Medical Society, April 24, the speakers were Drs. Oswald S. Wyatt, Minneapolis, on "Appendicitis in Childhood"; James B. Carey, Minneapolis, "Diverticulitis of the Colon," and Harold E. Richardson, St. Paul, "Cardiac Neurosis."—— Dr. William A. Wagner, Oshkosh, addressed the April meeting of the Manitowoc County Medical Society on "Complications of Pregnancy—Their Treatment and Prevention." —— The Pierce-St. Croix County Medical Society heard Judge O. Warnquist, judge of St. Croix County, speak, May 11, on law relating to the indigent sick, and Dr. Hartwick M. Stang, Eau Claire, "Genito-Urinary Problems of Interest to the General Practitioner."——Dr. John A. Urner, Minneapolis, addressed the Polk County Medical Society, April 20, on "Contraception and the Recent Developments."——The physicians of Vernon, Monroe and Juneau counties organized a tricounty medical society, May 11, and elected Dr. Arthur E. Winter, Tomah, president. Dr. Gunnar Gundersen, La Crosse, spoke on "Pyloric Obstruction."——Speakers before the Central Wisconsin Society of Ophthalmology and Oto-Laryngology at Wisconsin Rapids, May 15, included Dr. Erling W. Hansen, Minneapolis, on "Syphilis of the Ear, Nose and Throat."

GENERAL

Journal Transferred. — Beginning in January, 1934, the *Journal of Nutrition* will be published by the Wistar Institute, Philadelphia, instead of the American Institute of Nutrition. Acquisition of the journal is said to be the first step in the creation of a department of nutrition at the Wistar Institute.

Hebrew Medical Journal.—The third issue of the *Hebrew Physician,* said to be the only medical journal published in Hebrew outside of Palestine, has recently appeared. It contains seven major original articles and sections on "Palestine and Medicine," "Talmud and Medicine" and "Hebrew Medical Terminology," in addition to book reviews and summaries in English of the articles. Dr. Moses Einhorn, New York, is editor. The journal is published occasionally.

Dr. Willstaetter Awarded Medal. — Dr. Richard Willstaetter, Munich, has been awarded the Willard Gibbs Medal of the Chicago Section of the American Chemical Society. The medal will be presented to Dr. Willstaetter, September 13, during the eighty-sixth annual meeting of the American Chemical Society in Chicago. The award is made particularly for Dr. Willstaetter's work in the chemistry of chlorophyll. His research with cocaine alkaloids culminated in the synthesis of cocaine and made possible the commercial synthesis of local anesthetics. He attached the quinines and quininoid substances and discovered orthoquinine and proof of the structure of aniline black. Dr. Willstaetter's experiments with the carotinoids have made possible the separation of the individual components of this group.

Industrial Accident Boards and Commissions. — The annual convention of the International Association of Industrial Accident Boards and Commissions will be held at the Congress Hotel, Chicago, September 11-15. Wednesday, September 13, will be devoted entirely to medical and surgical subjects by the following Chicago physicians:

Nathan S. Davis III, Difference Between Backache Due to Trauma and That Due to Disease.
John D. Ellis, Routine Examination of the Injured Back.
Paul B. Magnuson, Congenital Anomalies and Arthritis as Contributing Causes in Injuries of the Spine.
Hollis E. Potter, (1) The Wedge Shaped Vertebra; (2) Some Distinctions Between Healed Fractures and Healed Vertebral Disease.
Claude R. G. Forrester, Reduction of Disability by Fusion of Vertebrae After Back Injury.
Philip H. Kreuscher, Shortening the Period of Disability After Fractures of the Spine.
LeRoy P. Kuhn, Final Disposition of Back Injury Cases.

Vaccination Defined.—The scarification of an arm and the introduction of vaccine virus do not constitute vaccination when immediately thereafter the vaccination wound is painted with tincture of iodine, according to a decision of Justice Adkins of the Supreme Court of the District of Columbia. The laws of the district provide that no child shall be admitted into the public schools who has not been duly vaccinated or otherwise protected against smallpox. The parents of two children, having failed to procure their admission into the public schools without vaccination, took them to a physician to be vaccinated. After he had scarified their arms and applied the vaccine, he went into an adjoining room to make out the necessary vaccination certificates. On his return he found that tincture of iodine had been applied to the vaccination wound of one of the children. The father nevertheless petitioned the Supreme Court for a writ of mandamus to compel the superintendent of schools to admit the children. Justice Adkins held, however, that there had been no vaccination as required by law and dismissed the petition.

Pacific Northwest Medical Association. — The annual meeting of the Pacific Northwest Medical Association will be held in Vancouver, B. C., July 4-7, under the presidency of Dr. Bertram D. Gillies, Vancouver. Guest speakers, each of whom will give several addresses and conduct clinics, include:

Dr. Alfred T. Bazin, Montreal, Acute Osteomyelitis, Tumors of the Colon and Rectum and Lesions of the Breast.
Dr. Charles H. Best, Toronto, Recent Work on Carbohydrate Metabolism, Fat Metabolism and Liver Function Tests.
Dr. William Boyd, Winnipeg, Tumors of the Neck, Pathology of the Breast Regarded as Disordered Physiology, and Recovery from Infection.
Dr. John G. Fitzgerald, Toronto, Meningococcic Meningitis, Staphylococcic Infections and the Nature of Antigens.
Dr. Alvah H. Gordon, Montreal, Migraine, Diagnosis of Disease with Coincident Enlargement of the Liver and Spleen.
Dr. Alvin T. Mathers, Winnipeg, Medicolegal Problems, Psychoneuroses and Sleep and Its Disorders.
Dr. Samuel A. Kinnier Wilson, London, England, Visceral and Affective Epilepsy, Cerebral Tumors and Hysteria from the Physiologic Side.
Dr. David E. S. Wishart, Toronto, Vertigo, Mastoiditis in Children and Sinusitis in Children.

Medical Bills in Congress.—*Bills Introduced:* S. 1831, introduced by Mr. Schall, Minnesota, H. R. 5866 and H. R. 5882, introduced by Representative Smith, Washington, and H. R. 5908, introduced by Representative Gray, Indiana, propose to reenact all public laws granting medical or hospital treatment, domiciliary care, compensation and other allowances, pensions and retirement pay to veterans, that were repealed by the Economy Act, approved March 20, 1933. S. 1842, introduced by Senator Hastings, Delaware, and H. R. 5978, introduced by Representative Pierce, Oregon, propose to authorize the dissemination of information relating to the prevention of conception, and articles, instruments, substances, drugs and medicines designed, adapted or intended for the prevention of conception, (1) by any physician legally licensed to practice medicine or by his direction or prescription; (2) by any medical college legally chartered under the laws of any state, territory or the District of Columbia; (3) by any druggist in filling any prescription of a licensed physician, or (4) by any hospital or clinic licensed in any state, territory or the District of Columbia. S. 1944, introduced by Senator Copeland, New York, and H. R. 6110, introduced by Representative Sirovich, New York, propose to prevent the manufacture, shipment and sale of adulterated or misbranded food, drugs and cosmetics, to regulate traffic therein and to prevent the false advertisement of food, drugs and cosmetics. H. R. 5851, introduced by Representative Miller, Arkansas, H. R. 5883, introduced by Representative Glover, Arkansas, and H. R. 5906, introduced by Representative Eltse, California, propose to amend the Economy Act so as to provide increased pensions for veterans. H. R. 5926, introduced by Representative Dingell, Michigan, proposes to amend the Reconstruction Finance Corporation Act to provide for loans to nonprofit corporations organized for the purpose of operating hospitals and homes "for sick, infirm, indigent persons of old age." H. R. 5967, introduced (by request) by Representative Ludlow, Indiana, proposes to prohibit the counterfeiting of drugs. H. R. 6111 and H. R. 6118, introduced by Representative Sirovich, New York, propose to provide for the truthful labeling of drugs.

FOREIGN

Prize for Essay on Industrial Accidents.—The International Congress for Industrial Diseases and Accidents has instituted a prize of 1,000 Swiss francs for the best essay on the consequences of an industrial accident. The manuscript, which may be in German, French, Italian or English, should be sent to the general secretary of the congress, Geneva, before December, 1931.

Society News.—The sixth English-speaking Conference on Maternity and Child Welfare will be held in London, July 5-7. Sir George Newman, medical officer of health of Great Britain, will deliver the presidential address. Among subjects to be discussed are scope and advancement of antenatal care, care and protection of illegitimate children, and health of the child in relation to environment. For information apply to Miss J. Halford, 117 Piccadilly, London, W. 1.

Course for Otolaryngologists.—The Association of Lecturers for Medical Post-Graduate Courses in Berlin is sponsoring an intensive graduate course for otolaryngologists, in English, at the University of Berlin, July 24-August 4. The number of participants is limited to fifteen, as practical work will be emphasized. For all further information apply to the secretary, English section, Dozentenvereinigung für Ärztliche Fortbildung, Berlin, N. W. 7, Robert Kochplatz 7.

Institute of Hygiene Opened in Calcutta.—The All-India Institute of Hygiene and Public Health, Calcutta, a gift of the Rockefeller Foundation to the government of India, was opened recently; addresses were made by Sir John Anderson, governor of Bengal, and Lieut. Col. Alexander D. Stewart, director of the institute. The school will be operated in cooperation with the Calcutta School of Tropical Medicine, where basic subjects will continue to be taught, while the institute deals purely with public health subjects related to Indian requirements. It will later be affiliated with the University of Calcutta, through which a doctorate in public health will be offered. The building, which harmonizes with the school of tropical medicine, has four stories, with facilities for teaching, laboratory work and lectures. A number of rooms will be artificially cooled.

Government Services

Army Personals

Major Joseph C. Breitling, relieved from duty at Chilkoot Barracks, Alaska, and assigned at Fort Banks, Mass.

Major John Wallace, relieved at Walter Reed General Hospital and assigned to the Hawaiian Department.

Lieut. Col. Frederick S. Wright, on completion of present tour of foreign service, is assigned at Fitzsimons General Hospital, Denver.

Col. Robert H. Pierson was to proceed to his home, Dec. 26, 1932, to await retirement, for the convenience of the government.

Lieut. Harry B. Ditmore, Major William K. Evans, Major Ralph Duffy and Col. Leartus J. Owen, having been found incapacitated for active service on account of disability incident thereto, their retirement is announced.

Col. Lucius L. Hopwood, Major William E. McCormack, Major Fielding T. Robeson and Col. Peter C. Field, having been found by an army retiring board incapacitated for active service on account of disability incident thereto, their retirement is announced.

Changes in Veterans' Administration

The following changes in the medical personnel of the Veterans' Administration, among others, were reported in the April issue of the *Medical Bulletin:*

Dr. Nathaniel H. Badaines, reinstated at Bronx, N. Y.
Dr. Martin L. Black, reinstated at Bronx, N. Y.
Dr. Robert H. Christian, to regional office, Birmingham, Ala.
Dr. Grover C. Daniel, to Veterans' Administration Home, Los Angeles.
Dr. Joseph P. DeRiver, reinstated at Bronx, N. Y.
Dr. Wallace A. Gerrie, reinstated at Columbia, S. C.
Dr. Silas R. Hosmer, to regional office, Cincinnati.
Dr. Irving I. Ludwig, to Canandaigua, N. Y.
Dr. Charlie M. Mathias, to Aspinwall, Pa.
Dr. Harry Moskowitz, to Bronx, N. Y.
Dr. Gilbert A. Rhodes, to Tuscaloosa, Ala.
Dr. Harold E. Schwing, to Aspinwall, Pa.
Dr. Shelton G. Silverburg, to Canandaigua, N. Y.
Dr. Robert F. Souther, reinstated at Bronx, N. Y.
Dr. Thaddeus S. Troy, to Veterans' Administration Home, St. Petersburg, Fla.
Dr. Oliver M. Warner, to Aspinwall, Pa.

U. S. Public Health Service

Passed Asst. Surg. (R) Floyd N. Shipp, relieved at New London, Conn., and assigned at the Marine Hospital, Mobile, Ala.

Surg. (R) Carl B. DeForest, relieved at Mobile and assigned at the U. S. Coast Guard Academy, New London, Conn.

Passed Asst. Surg. Ralph Gregg, relieved at Warsaw, Poland, and assigned at Genoa, Italy.

Passed Asst. Surg. Gregory J. Van Beeck, relieved at Genoa, Italy, and assigned at Ellis Island.

Passed Asst. Surg. Edwin G. Williams, relieved at Liverpool, England, and assigned at Warsaw, Poland.

Asst. Surg. Austin V. Debert, relieved at New Orleans, and assigned at the penitentiary, Atlanta, Ga.

Passed Asst. Surg. Erval R. Coffey, relieved at Washington, D.C., and assigned at Seattle, to establish headquarters for the purpose of cooperating with the state health department in the enforcement of its rules and regulations.

Surg. William A. Korn, relieved at Port Arthur, Texas, and assigned to the Marine Hospital, San Francisco, for duty.

Surg. Herbert M. Manning, relieved at Warsaw, Poland, and assigned to duty at Washington, D. C.

Surg. Octavius M. Spencer, relieved at Helena, Mont., and assigned at the Marine Hospital, Chicago.

Surg. John W. Tappan, relieved at San Diego, on or about June 1, and assigned at El Paso, Texas.

Courses for Flight Surgeons

Beginning with the next training year, the militia bureau will offer a program whereby six medical officers will be given active duty training at the School of Aviation Medicine. Two six weeks courses will be conducted, one beginning October 15, one March 1, each year. Aptitude for service will be of foremost consideration in the selection of the officers to take the course.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 27, 1933.

The Resignation of Sir Arthur Keith

After twenty-five years' work as conservator of the Museum of the Royal College of Surgeons and as hunterian lecturer, Sir Arthur Keith, who is 67 and has been in poor health, is about to resign. To all who know the college, the loss will be considered irreparable. A specialist in many subjects—anatomist, physiologist, pathologist, anthropologist—he has, perhaps for this reason, none of the specialist's narrow outlook. Indeed, the delight of his teaching is the philosophic breadth with which he views every subject. The museum of the college has the greatest collection in the world illustrating the phenomena of life, in both health and disease, and is an expansion of the famous collection of John Hunter. His work and teaching are so much in evidence that the college might be described as a temple devoted to his memory. To no living man can the great adjective hunterian be applied with the same force as to Keith. Indeed, in this age of specialists he may be described as the last of the hunterians. All who have heard him lecture will recall how he loved to show that some recent advance had been foreshadowed in Hunter's teaching, even the doctrine of evolution. Evolutionist is the word that best sums up Keith, who has said that if he had to edit "The Origin of Species" he would find nothing to erase but much new evidence to add. His teaching is permeated with evolution.

But Keith is not severing his connection with the college. He will have charge of the two laboratories of the college, recently built at Downe, in Kent, where Charles Darwin lived. They are endowed by Sir Buckstone Browne, a retired genito-urinary surgeon, and are for experimental work in surgery. Keith will supervise the work of the young surgeons who will live and work in Downe.

Assistance for Professors Displaced in Germany

An organization called the Academic Assistance Council is being formed to assist teachers and investigators who "on the grounds of religion, political opinion or race are unable to carry on their work in their own country." An appeal issued to all "concerned for academic freedom and the security of learning" states that eminent scholars, men of science and university teachers are being compelled to relinquish their posts in German universities. Outside help for more than a small fraction of teachers, now likely to be condemned to want and idleness, will depend on the existence of large funds specially devoted to the purpose. Some organization will be needed to act as a center of information and put the teachers concerned into touch with the institutions that can best help them. A provisional council has been formed for these purposes, which will cooperate with similar organizations now being formed in other countries. Means are asked to prevent the waste of exceptional ability. It is pointed out that the issue raised is not a Jewish one alone; many who have suffered have no Jewish connection. The Royal Society has placed accommodation at the disposal of the council. Sir William Beveridge and Prof. C. S. Gibson are acting as honorary secretaries. The appeal is signed by the most eminent British scientists, such as Lord Rayleigh, Lord Rutherford, Sir. J. J. Thompson and Sir William Bragg. The scientific side of the medical profession is represented by Professors J. S. Haldane, Sir Gowland Hopkins, Sir Charles S. Sherrington, A. V. Hill, G. Elliot Smith and Major Greenwood. The names are given of 164 teachers named in German newspapers as having been given leave of absence, been dismissed or having resigned as a protest against other dismissals or action of students between

April 4 and May 15. The list is confined to institutions of a university character and includes professors and privatdozents but not assistants engaged in research work. The great bulk of the persons named are professors. It is known that the list is incomplete, but it has been thought best to rely only on statements that have become public in Germany and so far have not been contradicted.

International Pediatric Conference

The third International Pediatric Conference will be held in London at the House of the British Medical Association, July 20, 21 and 22, under the presidency of Prof. G. F. Still. The congress will be opened by the Duke and Duchess of York, who will welcome the members in the great hall of University College. The subjects for general discussion include the nature of allergy and the prophylaxis of milk-borne diseases. Nominations are invited from the secretaries of the various national committees for delegates to take part in these discussions and to contribute independent papers. Membership in the conference is open to all members of a recognized medical society, but they must be nominated by their own national committee. The subscription for members is $10 and for nonmedical persons accompanying members $5, payable in advance to Dr. James H. Thursfield, 84 Wimpole Street, London, W. 1. A demonstration of patients from all the children's clinics in London will be given at the Hospital for Sick Children, Great Ormond Street. The secretary is Dr. Leonard Findlay, 61 Harley Street, London, W. 1.

PARIS

(From Our Regular Correspondent)

May 10, 1933.

Controversy Concerning the Nature of Bacteriophage

The discovery of d'Herelle concerning the existence of filtrable and living viruses that develop in bacterial cultures and are capable of producing bacteriolysis has always been the subject of controversies at the Institut Pasteur de Paris, where d'Herelle made his discovery. The clinical results are incontestable; but d'Herelle regards this lyzing principle as a living micro-organism, which he calls "bacteriophage," and supports his view on the fact that this principle can be cultivated indefinitely by transplanting in nutritive mediums and on the added fact that it is destroyed by heat. Innumerable observations have shown that the bacteriophage of the staphylococcus, when injected into the lesions of furuncles or anthrax, renders the pus sterile. The bacteriophage of cholera, when implanted in India in the wells of infected regions, has promptly arrested epidemics. Nevertheless, Professors Roux and Calmette, the directors of the Institut Pasteur de Paris, have always questioned the living nature of the bacteriophage. That is why d'Herelle, who is of Canadian origin, left the Institut Pasteur, a few years ago, and went to Brussels at first to work with Bordet and later to Alexandria, where the government put him in charge of the laboratory of the sanitary services and sent him on a mission to the Indies. A new fact has been developed that appears to justify the opinion of the Institut Pasteur. Mr. Calmette has recently presented to the Academy of Sciences the results of research by Noël Bernard and Guillerm, who have found, in cultures of the cholera vibrio, a precipitable diastase that has the power of rapidly lyzing the vibrio. This diastase, which may be destroyed by heat, acts in infinitesimal doses and makes indefinitely active the tubes of physiologic solution of sodium chloride into which it is successively introduced, as in the transplantations of a bacterial culture. It appears, therefore, to undergo a development, an observation that is new in the history of ferments and that is fraught with great consequences in biology. Further research is necessary, but, from present indications, Mr. Calmette thinks that he is justified in concluding that the bacteriophage, as he has always suspected, is a myth.

Neutralizing Properties of Blood Serum of Adults Toward Poliomyelitis Virus

Netter, Levaditi and Hornus have contributed research on the neutralization of the virus of poliomyelitis by the blood serum of adults who have lived with patients with poliomyelitis. During the epidemic, two years ago, in Alsace, which spread over the eastern provinces of France, Levaditi was delegated by the minister of public health to make an extensive inquiry. He conceived the idea that possibly the physicians and nurses might be playing the part of germ carriers; for poliomyelitis appeared in homes soon after they had been present because of other diseases. These germ carriers were immunized without knowing it. It was assumed that they had probably suffered an attack of the virus, which passed unobserved but which was sufficient to immunize them. It was shown that their blood serum was capable of neutralizing the virus or of making it harmless when injected into apes. Finally, it was found that this blood serum could be administered to sick patients with the same curative effects that the blood serum of convalescents from the disease was found to possess. Netter and Levaditi have announced to the Academy of Medicine that they tested the neutralizing power of the blood serum of fifteen normal adults residing where poliomyelitis had been present. This power was found in ten cases to be complete, in one case marked, in two cases perceptible, and in two cases nil. Mr. Netter considers it probable that the presence of neutralizing substances in the blood should be attributed to a previous infection that passed unobserved. As the neutralizing power varies in different serums, it is advisable to mix several serums. They found that a mixture of the serum of three persons from Paris who had had no contacts with poliomyelitis patients neutralized the virus at the same dilution as the mixture of three persons residing in Le Mans who had had prolonged contacts with poliomyelitis patients. Netter adds that it is advisable to determine in advance the neuralizing power of the serum of professional donors of blood for transfusion, so as to be in a position to secure at once from them serum that would be active against poliomyelitis, in case of an emergency.

BERLIN

(From Our Regular Correspondent)

May 22, 1933.

The Surgical Congress

The fifty-seventh annual session of the Deutsche Gesellschaft für Chirurgie was held as usual in Berlin, immediately after Easter. The opening address was delivered by the president, Prof. W. Roepke, director of the Wuppertal-Barmen Municipal Hospital, who referred to the national celebration and took a strong stand against the breaking up of medicine into an undue number of specialties. He said that for the progress of surgery it was indispensable to protect it against further splitting off of specialties, since only the surgeon with knowledge of the manifold connections and relationships between the organs of the body could be an exponent of real surgery. Such branches as orthopedics and the treatment of accidents should not be separated from general surgery. He pointed out what had been accomplished in recent years in the various fields of surgery. Surgery of the extremities, which, because of the increase in accidents, made increasing demands on surgical skill, must be placed in the foreground of surgical instruction. In the treatment of injured persons, the psychic rehabilitation of the patient so that he may resume his place in the world must receive consideration.

OPERATIVE SHOCK

Rehn, ordinarius at the University of Freiburg, presented a comprehensive paper on "Operative Shock." A distinction must

be made between a purely psychic and injury shock, and shock due to operations. The severe psychic disturbances that formerly resulted from surgical interventions have been almost eliminated through the improvements in the administration of anesthetics. It is now regarded as one of the chief tasks of preparation for an operation to provide all possible means for the prevention of psychic shock. Operative shock affects solely the vegetative system, which, as a result of the anesthesia, is much reduced in its susceptibility. Nevertheless, owing to vagus irritation, excitation in the coronary vessels may develop. The principal effects concern no doubt the central nervous system and the vascular system. Operative shock varies with the site of the operation. A deeper biologic insight into the connections between these events will make a better surgical performance possible. Hence, a precise understanding of the susceptibility to shock is important. This susceptibility expresses itself to a greater extent as circulatory disturbance than as collapse. The conditions designated by Rössle as allergic disturbances play a special rôle in this connection. But the formation of histamine has nothing to do with operative shock as such. It is more likely that the collection of large quantities of blood in the damaged musculature plays a rôle. Every successful operation constitutes a performance of the body. The decrease in the circulatory volume of the blood and the diminution of the minute volume are in direct relation to the effort put forth by the body and to the volume of work forced on it by the operation. The keeping of both in an optimal condition requires a commensurate preparation for the operation.

During the discussion, Rehn's assistant, von Brandis, called attention to the results of his research as showing the practical importance of the influence of anesthetics on the effects of remedies used to control the circulation. Frequently the circulation is damaged by the operative shock and hence is more likely to need active support. The discovery of the reduced action of these remedies as a result of anesthesia is of especial importance for the surgeon, because he is inclined to have too much confidence in the effectiveness of long recognized remedies for the circulation or to prescribe them in too small amounts or too weak concentrations. Special attention was called to the favorable postoperative action of papaverine on the peripheral arterial circulation for the relief of spasm and consequent disappearance of cyanosis. Klapp, surgeon, of Marburg, combats fat embolism in a drastic manner by standing his patients on the head and thus causing a migration of the fat emboli into the harmless periphery.

Professor Gauss of Würzburg emphasized that the dangers arising from the explosion of anesthetics are greater than is generally known. In using the ordinary large apparatus for the administration of anesthetics, electrical charges up to 5,000 volts quickly develop and a short circuit may be caused by a mere touch. This danger can be avoided with certainty by seeing to it that all apparatus is properly grounded.

As is the custom the congress set apart an evening for the presentation of photographs, at which time Henschen of Basel displayed his roentgenospectroscopic researches on diseased bones and on callus. Hintze of Berlin gave film presentations of healed cases of cancer of the mucosa and the internal organs, derived from the extensive material of the Bier clinic.

The second topic, "Internal Injuries of the Knee Joint," was presented by Bircher of Aarau, who brought out the interesting fact that the reconstruction of a healthy knee joint in men of the plains and in men of the highlands shows essential differences. He gave the results of his observations in 1,000 knee joint operations. The results of the substitution of kangaroo tendons for lacerated crucial ligaments were excellent.

The second day of the congress was devoted to the treatment of fractures. Magnus, the director of the large Miners' Hospital in Bochum, offered a communication on "The Indications and Contraindications in the Treatment of Fractures." In 1932, 4,500 fractures were treated in his hospital. With the aid of photographs, Magnus showed the results that he had secured with simple equipment, since general practitioners and small hospitals do not have at their disposal the apparatus found in large hospitals. In his environment it is desirable also to get along with as simple procedures as possible, in order that imposing methods may not increase immoderately the patient's consciousness of being a patient. Hence, the more simple the method, the better the treatment. Numerous details in the treatment of fractures were discussed on the basis of wide experience. Magnus does not favor the suggestion that persons injured in accidents should be treated in special hospitals for such cases. A better plan would be to provide, by means of continuation courses, such instruction as would make all physicians familiar with the most suitable simple methods.

OPERATIVE TREATMENT FOR CANCER

"Criteria for the Operative Treatment of Cancer" was the topic selected by Prof. F. König, surgeon, of Würzburg. He emphasized that, owing to a publicity campaign, the view had been spread that operations for cancer were almost never successful and had no particular value. He cited statistics from hospitals in southern Germany to prove that the number of cured cancer patients runs up into the hundreds, and that not only five years has passed without recurrence since the operation but, in many cases, even ten, twenty and more years. These statistics deal, in part, with especially malignant tumors. In contrast with a recent book by Liek, König said there is no doubt that surgical treatment of cancer, in combination with irradiation, produces much better results than Liek is willing to admit. He urged that every operable cancer be subjected without fail to surgical treatment. The only exception would be cutaneous and mucosal cancers, provided they are easily accessible. Schmieden of Frankfort-on-Main likewise held this view as representing the uniform opinion of German surgeons. Schönbauer of Vienna, who recommended the use of the electric knife for biopsies, took the same stand.

The papers on "The Surgery of Accidents" were introduced by far reaching statements by Lexer of Munich, who said that the task of the surgeon does not consist merely in eliminating the injury: a much more important task is to restore completely the working capacity of the injured person, and for that purpose psychic supervision is imperative. Such supervision cannot be successfully exercised by any one other than the physician, and the best person for the task is the surgeon who performed the operation, because the patient has learned to trust him. Measures introduced with that in view have been successful at the university clinic of which Lexer is the director.

"The Catgut Problem" was elaborated by Konrich of Berlin and Zeissler of Altona. In parallel investigations, many thousand meters of catgut from various German and foreign pharmaceutic houses were examined. The results were not absolutely satisfactory, so that, in collaboration with the federal bureau of health, the Deutsche Gesellschaft für Chirurgie and the catgut industry, a center for the examination of catgut is to be created, which will study the problem of the production of sterile catgut.

Professor Kirschner of Tübingen was chosen president of the society for the 1934 session.

Unauthorized Traffic in Drugs

For decades, the German reich has had regulations governing the traffic in drugs and medicaments. In a recent circular letter from the Prussian minister of the interior it is said that the dispensing of drugs and medicines outside of the pharmacies has increased to an alarming extent. It has even been observed that remedies that are "subject to prescription" are sometimes sold over the counter in shops handling mis-

cellaneous articles. The ministry of the interior has therefore issued instructions to the authorities to take drastic action to check this unauthorized traffic in drugs.

BELGIUM

(From Our Regular Correspondent)

May 13, 1933.

Treatment of Cancer of the Cervix

Addressing recently the Société belge de chirurgie, Delporte, Cahen and Sluys gave a clear account of the present status of the treatment of cancer of the cervix uteri. They show that there are differences of opinion, owing to the fact that the classification of cases as proposed by the cancer commission of the League of Nations has only a relative character. The personal factor plays a great part in the estimation of operability. The operative statistics are also sometimes purposely distorted.

The Wertheim operation has given remarkable results, but it is applicable to only a small number of cases. The inoperable cases are numerous and depend much on the person who makes the selection. The operative results likewise vary. The operation has a high mortality, although it has been diminished, especially since the use of Mikulicz drainage. The results from current practice are, however, much less brilliant than some published statistics would indicate.

The technic of the application of curietherapy is simple, whereas the Wertheim operation requires long experience. The results are better than with the Wertheim operation, for one obtains 45 per cent of recoveries at the end of five years. Curietherapy has one disadvantage: the operator cannot so carefully treat the glands, and it sometimes happens that a recurrence develops.

That is why the authors supplement curietherapy with a Wertheim operation, which is performed from two to three months later. The operation is then performed without difficulty. Among fifty-three cases in which they operated under these conditions, the authors had three deaths, one due to embolism on the third day, and the two others due to generalized peritonitis. In nine of the specimens of tissue removed, cancer cells were found, enveloped in fibrous tissue. Fifteen of the fifty-three patients operated on had glands containing cancer cells.

They reported also the results secured by means of curietherapy during the previous ten years. They applied this treatment in 437 cases, without taking account of operability. The treatment was applied in two stages, a vaginal application being followed by an intra-uterine application after dilation. In some patients the treatment was supplemented by intra-abdominal applications. They reported eighty recoveries out of 327 cases (26 per cent), after an interval of five years. The recurrences took the form of a progressive invasion of the pelvis, which shows that the action of the rays on the glands had been inadequate.

Rapid Transportation of Patients

Toward the end of 1932, the Red Cross Society of Belgium organized in Belgium twenty-seven centers of sanitary transportation. Thirty-nine vehicles have been constantly in service, and more than 10,000 sick and injured persons have had the benefits of this service. The transport centers are located so that no town is more than twenty-five miles distant from a center. This system fulfils perfectly its essential purpose of giving to patients first aid on the spot and of transporting them immediately and under the best conditions to a hospital center.

Eradication of Mosquito Larvae at Elisabethville

The Société belge de médecine tropicale has published a report on the activity of its sanitary crew in Elisabethville during the first six months of its existence. The crew removed 28,043 empty receptacles (tin cans and the like) from the city and the environs; 3,084 hatching places of mosquitoes were destroyed. In general, the European quarters of the city are less sanitary than the native quarters, and the servants of the Europeans are responsible for these conditions. The report emphasizes the need of cleaning up the neutral zone between the European and the native quarters.

VIENNA

(From Our Regular Correspondent)

May 10, 1933.

The First Necropsies in Vienna

During a lecture recently delivered at the Historisches Seminar of the University of Vienna it was recalled that the first necropsy on a human body performed in accordance with scientific principles, within the area of German countries, occurred in Vienna in 1404. From Lower Italy, where every five years one necropsy on a human body was permitted by law, the art of anatomy spread through Upper Italy into Germany. Galeazzo de Sophia, a physician of Padua, brought this art to Vienna, where, on Feb. 12, 1404, in the presence of "doctors and scholars" of the medical faculty and of "surgeons and apothecaries," he performed a necropsy. The second dissection took place in 1418, and lasted from February 21 to February 28. After completion of the dissection, the bishop held a solemn mass for the soul of the deceased. In 1435, the students of medicine demanded that a public "anatomy" should be again undertaken during the winter semester and that henceforth a human body (alternately a male and a female body) should be dissected every year. The faculty accepted this suggestion, and a committee of two doctors and two students was appointed in March, 1436, to make the arrangements. Dr. Johannes Eigel was chosen to serve as "demonstrator." But the corpse could not be secured. Four years later the students renewed their demand, and again the faculty complied but stipulated that only doctors and scholars would be permitted to be present. To secure a body, a petition was sent to the mayor and to the judge of the municipal court of Vienna requesting that the body of a criminal who was soon to be hanged should be placed at the disposal of the medical faculty, after execution of the sentence. The request was granted. But, when the body of the hanged criminal was turned over to the students and dissection begun, the supposedly dead man showed signs of life. The circumstance caused so much excitement that the dissection did not take place. Not until four years later was the desire of the students fulfilled. The records of the fifteenth century reveal only two other necropsies performed in Vienna, one in 1452 and one in 1459, or a total of five. In the next century, however, more frequent opportunities to study the structure of the body by means of necropsies were afforded.

Pathogenesis of Acute Disorders of the Pancreas

Research at the Chirurgische Klinik of the University of Vienna on a large number of patients, concerning which Dr. H. L. Popper reported recently before the Gesellschaft der Aerzte, yielded data on the pathogenesis of acute pancreatitis, which in recent years has become prevalent. A distinction is still made between pancreatitis and pancreatic necrosis. The former is regarded as a bacterial disorder, whereas the necrosis is interpreted as a result of an activation by trypsin, which is brought about by the flow of bile into the pancreas.

In 200 gallbladders that came to operation, increased ferment values were found on examination to be present in the bile, having been produced by the penetration of pancreatic fluid from the pancreatic duct into the common bile duct. Further observations showed that in the majority of cases of acute pancreatic disorders such an influx of pancreatic fluid actually occurs. There develops in the biliary passages a primary

trypsin activation, and this is carried into the pancreas from the distal portion of the choledochus within the pancreas. Whereas normally the flow of pancreatic fluid into the biliary passages takes place without further incident, since the mixture rapidly flows out again, in the event of disturbances of the outflow at Vater's papilla there occurs an intensive interaction of bile and pancreatic fluid on each other and a marked action on the adjacent tissues. The disturbance of the outflow is caused usually by stone but occasionally also by spastic conditions affecting Oddi's sphincter. This conception of the origin of acute pancreatic disorders corresponds to the measurements of the pressure in the pancreatic and the bile ducts and is doubtless correct for the majority of cases—also for the majority of postoperative cases of pancreatitis. In the possibility of communication between the choledochus and the pancreatic duct lies the factor that predisposes to pancreatitis. Dr. Popper rejects an etiologic separation of pancreatitis and pancreatic necrosis. He thinks that the prevailing condition of the pancreatic secretion is the most important factor determining the type of disorder that arises. It is his opinion also that experimentation on animals is not conclusive for the judging of such conditions. Direct observation on man is required for the reason that in animals the conditions about the mouth of the pancreas are entirely different from those found in man.

Eosinophilia in the Child

In the *Medicinisches Seminar*, Dr. Lehndorff discussed recently eosinophilia in the child. He emphasized that this condition in itself justified no far-reaching conclusions. The most important thing is a careful clinical examination of the patient, but the discovery of an eosinophilia contributes, to be sure, much toward the clarification of the case. It is known that the spleen regulates in some manner, possibly by means of hormones, the production and distribution of acidophil cells in the blood. It may also be stated with certainty that the eosinophils constitute an excellent reagent in the child for infections and intoxications, as they disappear from the blood when the infections appear. Reappearance of the eosinophils may be regarded as a favorable prognostic sign. This "post-infectious" eosinophilia amounts usually only to from 5 to 8 per cent, but it is diagnostically and prognostically very significant. For example, it announces the approaching lysis and cure of pneumonia, even though the infiltration symptoms are still intensive. Conversely, absence of eosinophilia after the drop in temperature justifies the suspicion that it was only a pseudocrisis. The prognostically favorable significance of eosinophilia holds good in all infectious processes, such as sepsis, suppurations and osteomyelitis. Also in chronic diseases, such as tuberculosis, it is valuable. If, in the presence of acute exanthems, there is some uncertainty as to whether rubella, scarlet fever or a scarlatiniform exanthem is involved, eosinophilia will decide in favor of scarlet fever. The phenomenon is here sharply marked. Also in allergic disorders it appears distinctly: in asthma, hay fever, urticaria, migraine, and idiosyncrasy of various kinds. But also a number of medicaments, such as digitalis, produce occasionally considerable eosinophilia. In the frequent severe abdominal conditions, which in childhood so often cause the examiner to suspect appendicitis or peritonitis, the acidophils point away from an inflammatory genesis. Since all worm disorders are associated with eosinophilia (Oxyuris, Ascaris, Trichomonas moderately, Echinococcus much more so, but especially Trichinella—50 per cent or more), such a condition must be suspected in dealing with children. Also prurigo, pemphigus, herpes-dermatitis and itching eczemas, likewise all forms of medicine dermatitis, as well as lymphogranulomatosis, show higher values of eosinophilia. Abnormally high values (from 30 to 90 per cent) are found in the condition designated "splenomegalia with persistent eosinophilia," with a very large, hard spleen; also after a liver diet; particularly after the ingestion of raw liver but not after liver extracts. It is not found until from three to six weeks after the beginning of the liver diet. It is not characteristic for pernicious anemia but arises in every anemia; also in absolutely healthy persons, if they follow a liver diet long enough, and attains fairly high values: 60 per cent or more. This "alimentary eosinophilia" may cause diagnostic errors, if the examiner loses sight of it.

A New Cancer Hospital in Vienna

Vienna possesses at present only one institute that deals exclusively with research and treatment of cancer. The hospital owes its existence to a generous gift of an American philanthropist who, in gratitude for his recovery from a grave disease, supplied his Vienna physician with the funds for this institute. But recently, at the annual session of the Oesterreichische Gesellschaft für Krebsforschung, Professor Eiselsberg announced that another American has made a large gift to be used for the erection of a second cancer hospital in Vienna. The institute will begin its work by the end of June, this year. Prof. Dr. Freund, who by his researches in this field has achieved international fame (the Freund-Kaminer reaction, the Freund diet), will become the director of the new hospital and is planning to test thoroughly the dietetic treatment of cancer disease. The new hospital will have twenty beds, together with the necessary laboratories and operating rooms. It is designed for patients of moderate means, the charges being the same as in all the public hospitals of Vienna.

Through the cooperation of the ministry of health, the sanitary department of the city of Vienna and the Gesellschaft für Krebsforschung und Bekämpfung, a census of all tumor patients in Vienna is contemplated, in order that a system of aid may be worked out. A beginning of a system of aid for cancer patients in Vienna has already been made through the creation of the excellent radium department in the Vienna Municipal Hospital, where the surgical department has reserved sixty beds for the application of ray treatment in cancer, and where the records of all known cancer cases, their postoperative course and their precise control are thoroughly organized.

Surgical Treatment of Syringomyelia

The treatment of syringomyelia proposed by Poussep in 1927, which consisted in an attempt to relieve the spinal cord by an operative opening of the intramedullary cavities, has been tested in about fifty cases of syringomyelia. The results cannot be regarded as perfectly satisfactory, since the time has been too short and the number of cases too small. The assumption that the cavities in the spinal cord exert a pressure on the cord does not appear to be justified in all cases, as Professor Denk stated recently in an address before the Gesellschaft der Wiener Aerzte. He brought out that frequently one finds cavities without much rigid tension. Nevertheless, when these cavities were opened nearly always a marked improvement of the clinical symptoms followed. Professor Denk discussed the technic of the operation. The spinal cord is split longitudinally in the region of the cavity formation for a distance of from 1 to 3 cm., so that the content of the cavity is evacuated and can continue to escape through the incision. For the incision a spot in which the fluid is near the surface should be chosen. The dura and the soft parts are then sutured. How long the incision remains open is not yet known exactly. In one case, which resulted fatally four weeks after the operation, the wound was still open. Some German authors who have reported good operative results have emphasized that the wounds in the spinal cord apparently do not close. Professor Denk presented two cases, a man aged 47 and a man aged 54, in whom all previously known methods of treatment, including roentgen rays, had been fruitless. Incision of the spinal cord, so far as the short period of observa-

tion permits an opinion, at least checked the process if it did not cure the disorder. Soon after the operation (from six to ten days), a distinct diminution of the associated pain and spastic paresis was evident. It must be admitted, however, as was emphasized during the discussion, that likewise roentgen irradiations of such processes not infrequently bring about a marked retrogression of the subjective symptoms. In syringomyelia, young tissue that is highly sensitive to irradiation is involved, for the most part; especially the endothelium of the capillaries is damaged, and thus the production of immoderate fluid is checked. If roentgen therapy proves ineffective, an operation is in order and in many cases can be expected to yield fairly good results.

MADRID

(From Our Regular Correspondent)

May 3, 1933.

International Congress of Ophthalmology

The fourteenth International Congress of Ophthalmology was held, April 16-22, at Madrid with more than 2,000 ophthalmologists from several countries in attendance. The president of the republic and the most prominent members of the government attended and delivered speeches. The official topics were tuberculosis of the iris and of the ciliary body and detachment of the retina. Following are abstracts of the discussions:

Dr. E. V. L. Brown of Chicago said that the treatment of tuberculous iridocyclitis is not satisfactory from either the theoretical or the practical point of view. Roentgen therapy and the introduction of the patient's own blood into the anterior chamber of the eye, which have been considered the most effective treatment, fail to prevent recurrences and the appearance of the disease in the normal eye, and they have no influence on the primary seat of the tuberculosis in the thorax. Exactly the same unsatisfactory results are observed with tuberculin therapy. The speaker recommended fresh air, rest and proper diet in order to improve the general condition of the patient, as coadjuvant measures.

Dr. Josef Igersheimer of Frankfort-on-Main spoke on the pathologic anatomy of tuberculosis of the iris and of the ciliary body. He said that in some cases the tissues do not undergo a specific histologic reaction to the tubercle bacillus. He classified the clinical forms of tuberculosis of the iris and of the ciliary body into two groups. The first group is divided into two subgroups. The first subgroup, which includes the acute and subacute cases, is made up of certain forms of iridociliary tuberculosis characterized by the presence of either large or small nodules. The second subgroup, which includes the chronic cases, is made up of transitional forms, forms with tuberculous lesions in the bulb without lesions in the uveal tract, forms with a suspected tuberculous structure of the uveal tract, forms of clinical tuberculosis of the uveal tract without specific histologic lesions, and forms with chronic inflammation of the uveal tract in which neither clinical nor anatomic signs of certainty of tuberculosis exist. The second group is made up of the forms in which the predominant symptom is either necrosis or diffuse suppuration. The more sensitized the tissues are, the more frequent the development of hypopyon, of caseation and of perforation of the bulb. These violent reactions are frequently observed in children. The conditions of immunity are important in the understanding of these forms, but at present, and having only the results of the tuberculin reactions to go by, it is not possible to draw conclusions on the sensitization of the iridociliary tissues.

Dr. H. Lagrange of Paris spoke on the differential diagnosis of tuberculosis of the iris and of the ciliary body. There are several clinical forms of exudative tuberculosis of the iris and of the ciliary body. The diagnosis of tuberculosis of the iris and of the ciliary body is difficult, especially when certain forms of iritis or iridocyclitis are present. The differential diagnosis is made between tuberculosis, focal infection and syphilis. In cases in which neither a syphilitic etiology nor the presence of a focal infection can be proved, a diagnosis of tuberculosis is probably correct. It is a diagnosis of probability because there are no specific clinical signs to prove the presence of tuberculosis, except for the tuberculin test, which is still the most useful diagnostic method. The local prognosis of this type of tuberculosis is serious in the grave forms. Certain forms of fibrous tuberculosis associated with fibrous manifestations of general tuberculosis may present local and general variations, parallel to those of allergy.

Dr. Arruga of Barcelona spoke on the etiology and pathogenesis of detachment of the retina. Two thirds of the cases occur in males, and bilateral detachment is frequently observed. In a group of 45,000 patients with eye diseases, 682 had retinal detachment and in 121 the lesion was bilateral. Myopia existed in 50 or 60 per cent of the cases of detachment of the retina. The choroid is torn more frequently than the retina, but it is not detached. Work in which the eyes are used to a great extent has not much influence as a causal factor. Histologic study proves that in most cases of retinal detachment there are atrophic changes with vascular degeneration of the retina. The intra-ocular pressure diminishes shortly after the detachment has occurred. The albumin content of the subretinal fluid increases as the detachment becomes older. It disappears, however, in very old detachments, probably because of the atrophy of the choroid. The specific gravity of this fluid is greater in the older than in the newer cases. Experimentation shows that the tearing of the retina either retards or prevents the reapplication of the detached retina. The theory of the choroidal exudation holds true in the pathogenesis of detachment of the retina in those cases in which the detachment is due to nephritic retinitis, exudative choroiditis and orbital diseases. When the detachment is caused by exudation, the retina may reapply itself if the exudates are reabsorbed. This is what happens in cases of retinitis complicating pregnancy. The theory of the retraction of the vitreous body seems logical when there are either vitreous hemorrhages or loss of the vitreous humor, because, during their reabsorption, retractile and cicatricial adhesions are formed. This theory, however, loses a great part of its value if one considers the absence of retinal detachment in the aged, following removal of a cataract or of the vitreous body, by Zur Nedden's method. The reapplication of the retina to the superior part of the detachment in cases in which a superior detachment becomes an inferior one shows also the lack of truthfulness of the theory of the retraction of the vitreous body. Dr. Arruga believes that idiopathic detachment of the retina is due in most cases to a lesion in the retina itself. If the retina is normal and healthy it is not easily detached, even if it is torn. In the production of retinal detachment there are several factors involved; that is, an energetic action of the vitreous body and the choroid, and some special condition in the retina itself. Experiments have shown that in order to cause detachment it is necessary to provoke large tears in the retina, a total withdrawal of the vitreous humor or an intense irritation of the choroid, and even in these conditions the detachment may be cured. The numerous retinal changes in the aged, which are invisible in ophthalmologic examinations, as well as certain types of iridocyclitis which cannot be seen by direct examination of the eye but which can be discovered by the slit lamp, may be made worse by the operation. Some nutritional disturbances and deficiencies of the liver and kidneys have an unfavorable action on the retina. Hypotension is due to the reabsorption of the vitreous humor by the choroid. It may be modified by psychic or moral disturbances and it favors detachment. Sclerosis of the retina favors detachment also in cases of small retinal tears. The form of the tear depends on the presence of adhesions between the

vitreous body, the retina and the choroid. The greater specific gravity of the subretinal fluid explains the progress of the detachment in a downward direction. It also justifies the position in which the patient is kept after the operation; that is, on the side on which the operation was performed.

Dr. Giuseppe Ovio of Rome spoke on the history of the treatment of detachment of the retina. When the real pathology of the condition was still unknown, it was considered as a form of amaurosis in the correction of which medical treatment was resorted to. Ware proposed the puncture of the sclerotic coat to evacuate the subretinal fluid. Samelsohn in 1875 advised the application of a bandage causing compression in the eye while the patient was lying in dorsal decubitus. Nowadays, medical treatment is used according to Samelsohn's precepts. Besides that, several other measures, such as having the patient in the dark, diaphoresis, the instillation of physostigmine and atropine, electrolysis, massage, the administration of iodine, mercurial and arsenical preparations, tuberculin therapy, a diet with little salt, and subconjunctival or intravitreous injections are used. The subconjunctival injections were recommended by Grosmann in 1883, although they became more widely used through the experiments of Mellinger in 1894. The foregoing measures are all based on logical conceptions. During the last half of a century there have been optimistic and pessimistic tides. Statistics presented by the author show that, under medical treatment, improvement occurs in *22* per cent of the cases and recovery in *22* per cent.

Dr. Alfred Vogt of Zurich spoke on surgical treatment of detachment of the retina. Rest is such an important factor in treatment that alone it may accomplish the cure. The aim of surgical treatment of detachment of the retina is to close the tear. Galezowski was the first to perform systematic thermocauterization of the retinal tear as a treatment for detachment of the retina. Retinal perforation may be of traumatic origin. The so-called spontaneous perforation of the retina may be favored by trauma in the presence of destructive processes of the retina, such as senile and presenile degeneration, myopic atrophy and cystic degeneration. The destruction of the vitreous humor parallels that of the retina. The spontaneous detachment is caused by either a tearing or a perforation. The hypotonia coexisting with the detachment is the result of the perforation and it disappears when the perforation is closed. To succeed in closing the perforation it is necessary to locate its origin, which may be done by ophthalmoscopic examination. Cauterization by using the apparatus of Gonin, electrocauterization, the chemical method of Guist, and diathermy according to the technic of Weve are the most important operative methods in use. The most simple method is ignipuncture by cautery and diathermy needle, which prevents loss of the vitreous humor. Cauterization with the needle should be exceedingly rapid (from one to three seconds). Otherwise, serious injury may result. The author advised the use of the needle of Weve in cases of small perforations located near the choroid and the use of the galvanocautery in cases of extensive perforations near the ora serrata. Generally, two cauterizations are necessary to cure an extensive tear.

Trachoma and blindness were also discussed during the congress. Dr. Wibaut of Amsterdam said that in 1931 an inquiry in which a great number of ophthalmologists from several countries took part was opened to study the initial symptoms of trachoma. It was found that in countries where trachoma is endemic the diagnosis is made long before the time of appearance of complications or scars. The difference of opinion among ophthalmologists rests on the fact that some of them consider certain cases as either benign or early forms of trachoma, while others regard them as cases of follicular conjunctivitis. Most ophthalmologists, however, consider the early noncomplicated forms of trachoma highly important. These early forms are frequently observed in children of preschool and school age. The author advised the systematic examination of children in school, at home and in the kindergarten in order to discover early cases of trachoma. These uncomplicated forms, if properly treated, may exist a long time without complications, even in those countries in which the virulent forms of the disease are not uncommon. The detection and treatment of trachomatous children are important in the campaign against trachoma. Instead of being sent away from school, trachomatous children should be treated in those educational centers.

Dr. Riccardo Galeazzi of Rome presented statistical studies demonstrating the possibility of producing in the eye a local immunity by means of a polyvalent vaccine made with bacteria isolated from patients having different kinds of ocular infections. The author believes that trachoma is due to the association of bacteria superposed on a constitutional trachomatous substratum which is identified with adenoidism.

Dr. P. K. Olitsky of New York reported the results of his experiments related with the transmission of trachoma from man to monkey. If the normal conjunctiva of monkeys is rubbed with secretions from trachomatous patients, or if monkeys receive a subconjunctival injection of trachomatous tissue of human origin, characteristic granular conjunctivitis develops, and the disease may be transmitted from monkey to monkey. The speaker started a series of similar transfers with cultures of Bacterium granulosis obtained from human trachomatous material. The period of inoculation of the disease, the transmission of the infection from the inoculated eye to the normal one, and the appearance, first, of the initial lesions and, later on, of the well developed lesions, as well as the histopathologic changes, are identical in animals in which the infection is transmitted by cultures and in those in which it is transmitted by infected tissues. The characteristic experimental lesions originate around the vessels, thus proving that the genesis of experimental trachoma is similar to that of human trachoma.

By the superposition of secondary infections in monkeys, following the inoculation with Bacterium granulosis it is possible to produce ocular lesions with a clinical aspect similar to that observed in florid trachoma in man. By the intracorneal injection of any agent with slight infective capacity, it is possible to produce in the animal a persistent keratitis similar to panus tenuis in trachoma in man. The active etiologic agent of these lesions is Bacterium granulosis. The intracorneal injection of these bacteria provokes the development of pseudopanus, which may persist at least for two years without regression of the lesions. The hypothesis that trachoma is a disease caused by an ultramicroscopic virus has not been as yet proved.

Dr. Manuel Marquez of Madrid spoke on the necessity of making a rational classification of the causes of blindness and he presented a classification in the form of a chart.

At the closing of the congress, a resolution was passed to be presented to the governments of several countries as a reaction of ophthalmologists against the charlatanism of those who sell eyeglasses or adjust them without being ophthalmologists. The congress moved that persons who sell glasses should do so only when they are prescribed by ophthalmologists, the only persons scientifically prepared to know the needs of their patients.

Loewenstein's Studies on Tuberculosis

Dr. Ernst Loewenstein of Vienna recently lectured in the Escuela de Sanidad of Madrid on his studies on the tubercle bacillus. The culture is made in a nutritive medium of the yolk of egg, after the material under investigation has been washed in a 15 per cent solution of sulphuric acid. All bacteria except the tubercle bacillus are killed in the solution. The speaker is able to show the presence of characteristic colonies of tubercle bacilli, even to macroscopic examination, in 80 per cent of the cases when the cultures have been made with the blood of tuberculous patients. Dr. Loewenstein explained in

detail his method of culture and stated that he has modified his conception on the etiology of tuberculosis. At first he found tubercle bacilli in the blood of patients with several clinical forms of tuberculosis—pulmonary, renal, cutaneous and osseous. The speaker found, later on, tubercle bacilli in the blood of patients with acute articular rheumatism. Up to July 1, 1932, he had made cultures from 1,430 specimens of blood of patients with acute articular rheumatism, 432 of which gave positive results for tubercle bacilli. Kren reported positive results in 100 per cent of the cases of lupus erythematosus when the disease was in evolution. The speaker, in collaboration with Dr. Karl Amersbach of Prague, made an examination of the tonsils and of the blood of several patients with polyarthritis. They detected tubercle bacilli in the tonsils of twelve patients with polyarthritis, in the blood of eight and in the blood and tonsils of two. The presence of tubercle bacilli in the tonsils and in the blood of polyarthritic patients confirmed the work previously reported by the speaker in collaboration with Reitter. Reitter believes that the presence of tuberculous bacillemia, increased allergy and increased filtration of the vessels, which may be caused either by an infection or by a trauma, are the necessary factors for the development of polyarthritis. Tubercle bacilli are in the blood of patients with chorea only during the early periods of the disease. The diagnosis of tuberculosis must be made from the fact that tubercle bacilli exist in the blood and not on the basis of characteristic tuberculous lesions in the tissues. The detection of tubercle bacilli in the blood is direct proof for the diagnosis of tuberculosis, while the presence of reactions of the tissues is indirect proof. The reaction of the tissues depends on several factors, such as the quality, quantity and strain of the bacilli, the conditions of immunity, the resistance of the tissues to the infection, and the portal of entry of the infection. The so-called tuberculous structure is only a phase in the cycle of the alterations caused by tubercle bacilli in the tissues. As Aschoff said in the Congress of Internal Medicine in 1921, "tuberculosis may produce both the typical histologic image of tuberculosis and the most varied aspects of inflammation." Loewenstein believes that there are certain forms of tuberculosis without a tuberculous structure, which follow the evolution of an acute or subacute infection, either with or without fever. On this ground, the speaker has tried to isolate tubercle bacilli in several diseases and pathologic conditions, such as in dementia praecox. He found tuberculous bacillemia in 142 of a group of 359 cases of dementia praecox. Tuberculous bacillemia was discovered in four out of six cases of retrobulbar neuritis. According to Loewenstein, retrobulbar neuritis, which was believed to be caused by the abuse of alcohol or tobacco, is only an initial symptom of multiple sclerosis. The speaker believes that tuberculosis of the intima of the vessels causes first the internal erosion of the vessels, followed by ulceration and sometimes by the rupture of the vessel. Tuberculosis of the intima is also responsible for the propagation of the tuberculous bacillemia. Loewenstein insisted on the existence of tuberculosis without the presence of a tuberculous nodule. Tuberculosis is, by preference, a vascular disease. Tubercle bacilli attack the endothelium of the vessels. The diagnosis of tuberculosis should not be excluded in necropsies until after a microscopic study and cultures of the organs suspected to be tuberculous have been made. The macroscopic examination of the organs is insufficient to make a correct diagnosis. That tuberculosis is a general and not a local disease is demonstrated by the clinical course of the disease, by its metastases to the various organs, by the characteristic fever chart, by the reaction of the conjunctiva of the tuberculous organism to tuberculin, and by the presence of tuberculous bacillemia. The detection of tubercle bacilli in the blood is of more value in the diagnosis than the tuberculin reaction and the complement fixation test.

(To be continued)

Marriages

JOHN MALLOY CLAYTON COVINGTON, Roanoke Rapids, N. C., to Miss Madge Westmoreland Balcome of Greenville, S. C., May 27.

WALTER MAUTHE, JR., Whitewater, Wis., to Miss Marie Joan Rolfs of Milwaukee, June 1.

CECIL E. NEWELL, Chattanooga, Tenn., to Miss Gretchen Thelen at Minneapolis, May 31.

RAYMOND H. KING, La Grange, Ga., to Miss Eleanor Haight of Jacksonville, Fla., April 28.

BERTHOLD AARON FREY, Los Angeles, to Miss Gertrude Cohen of Chicago, June 11.

ISADORE L. LEVIN, Lorain, Ohio, to Miss Judith Quasser of Portsmouth, May 28.

HAROLD E. ROE, Los Angeles, to Miss Leona Livingston at Chicago, May 6.

JOHN J. HOPKINS to Miss Iva Bromley, both of Decatur, Ill., May 7.

Deaths

Edward Osgood Otis ✠ Exeter, N. H.; Harvard University Medical School, Boston, 1877; emeritus professor of pulmonary diseases and climatology, Tufts College Medical School, Boston; member of the Massachusetts Medical Society and the American College of Physicians; member and past president of the American Climatological and Clinical Association; past president and honorary director of the National Tuberculosis Association; past president of the American Public Health Association and the Massachusetts Tuberculosis League; in 1901 delegate to the Congress on Tuberculosis in London and in 1912 to the International Congress on Tuberculosis in Rome; corresponding member of the International Anti-Tuberculosis Association; major, medical reserve corps, U. S. Army; served during the World War; for many years on the staff of the Boston Dispensary and formerly visiting and consulting physician to the Rutland (Mass.) Sanatorium; author of "Tuberculosis, Its Cause, Cure and Prevention," and "Pulmonary Tuberculosis"; aged 84; died, May 28.

Waldo Webster Walker ✠ Boston; State University of Iowa College of Homeopathic Medicine, Iowa City, 1913; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; assistant professor of laryngology and rhinology, Boston University School of Medicine; surgeon in the nose and throat department, Massachusetts Memorial Hospitals; aged 48; died, May 15.

John Howard Harter ✠ Seattle; Western Reserve University School of Medicine, Cleveland, 1916; member of the American Academy of Ophthalmology and Oto-Laryngology and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; on the staffs of the Columbus and Swedish hospitals; aged 45; died, May 13.

Thomas J. McKinney, Champaign, Ill.; Medical College of Indiana, Indianapolis, 1883; Northwestern University Medical School, Chicago, 1898; member of the Illinois State Medical Society; fellow of the American College of Surgeons; on the staff of the Julia F. Burnham Hospital; aged 73; died, May 27, in the Kenilworth (Ill.) Sanitarium.

Waldemar Theodore Browne, New Orleans; Long Island College Hospital, Brooklyn, 1909; member of the Louisiana State Medical Society; veteran of the Spanish-American and World wars; director, bureau of communicable diseases, Louisiana State Board of Health; aged 58; died, May 8, in the Charity Hospital, of heart disease.

Thomas Wray Grayson ✠ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1897; member of the American Gastro-Enterological Association and fellow of the American College of Physicians; served during the World War; aged 61; died, May 16, of bulbar paralysis and cerebral hemorrhage.

Walter R. McCray ✠ Charles City, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; past president and secretary of the Floyd County Medical Society; formerly county coroner; aged 58; died, May 15, in the Cedar Valley Hospital, of uremia.

Robert Patton Hoxsey, Beatrice, Neb.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; member of the Nebraska State Medical Association; on the staff of the Nebraska Institution for Feeble Minded; aged 63; died, March 23, of angina pectoris.

James Calhoun Harris, Anderson, S. C.; University of Maryland School of Medicine, Baltimore, 1883; member of the South Carolina Medical Association; fellow of the American College of Surgeons; aged 74; on the staff of the Anderson County Hospital, where he died, May 8, of angina pectoris.

Louis Bernard Knecht ✠ Mescalero, N. M.; Washington University School of Medicine, St. Louis, 1910; member of the Missouri State Medical Association; served during the World War; physician in charge of the Mescalero Indian Hospital; aged 45; died, May 28, of a self inflicted bullet wound.

Morton Byron Fishbaugh, Celina, Ohio; College of Physicians and Surgeons, Baltimore, 1893; member of the Ohio State Medical Association; president of the Mercer County Medical Society; aged 67; died, May 30, in a hospital at Lima, following an operation for gallstones.

Eugene Cohn ✠ Kankakee, Ill.; Barnes Medical College, St. Louis, 1898; Northwestern University Medical School, Chicago, 1906; fellow of the American College of Surgeons; formerly superintendent of the Kankakee State Hospital; aged 58; died, May 30, of heart disease.

Frederick Charles Esselbruegge ✠ St. Louis; Washington University School of Medicine, St. Louis, 1906; served during the World War; on the staff of the Christian Hospital; aged 49; died, May 22, of pneumonia, following an operation for appendicitis.

Kenneth Moncur Lindsay, Buffalo; University of Western Ontario Medical School, London, Ont., Canada, 1928; member of the Medical Society of the State of New York; aged 31; died, March 10, in London, Ont., of pneumonia.

Elmer Forrest Hayden, Tulsa, Okla.; University of the South Medical Department, Sewanee, Tenn., 1899; member of the Associated Anesthetists of the United States and Canada; aged 56; died May 21, of heart disease.

Minor Revere Adams, Statesville, N. C.; University of Maryland School of Medicine, Baltimore, 1878; member of the Medical Society of the State of North Carolina; aged 78; died suddenly, May 27, of heart disease.

George B. Burrus, Woodland Mills, Tenn.; University of Nashville Medical Department, 1886; Vanderbilt University School of Medicine, Nashville, 1886; aged 75; died, April 28, in a hospital at Jackson.

William Robert Blackburn, Virginia, Ill.; Barnes Medical College, St. Louis, 1898; member of the Illinois State Medical Society; aged 66; died, May 3, of pulmonary thrombosis and chronic myocarditis.

James Harney Fountain ✠ Chapin, Ill.; Rush Medical College, Chicago, 1881; aged 74; died, May 14, in the Passavant Hospital, Jacksonville, of morphine poisoning, presumably self administered.

Forbes Hamilton Broughton, Wolcottville, Ind.; Indiana Medical College, Indianapolis, 1874; Civil War veteran; aged 84; died, May 26, of chronic myocarditis, hypertension and arteriosclerosis.

Bruce McVean Mackall, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C., 1903; served during the World War; aged 51; died, May 1, of cerebral hemorrhage.

William L. Ruggles ✠ Oak Park, Ill.; Chicago Homeopathic Medical College, 1891; on the staff of the West Suburban Hospital; aged 68; died suddenly, April 29, of heart disease.

Melville Silverberg, San Francisco; Johns Hopkins University School of Medicine, Baltimore, 1902; aged 56; died, April 24, of hypertension, myocarditis and coronary thrombosis.

Joseph Arthur Kuykendall, San Francisco; California Medical College, San Francisco, 1896; aged 57; died, April 20, in the Franklin Hospital, of chronic myocarditis and nephritis.

Harry M. Smith ✠ Las Vegas, N. M.; Northwestern University Medical School, Chicago, 1891; on the staff of St. Anthony's Sanitarium and Hospital; aged 63; died, April 11.

Thomas Mason Evans, Los Angeles; Barnes Medical College, St. Louis, 1905; aged 51; died, April 12, in the Olive View (Calif.) Sanatorium, of chronic pulmonary tuberculosis.

Eleanor Clary Stocks, Chicago; Johns Hopkins University School of Medicine, Baltimore, 1920; aged 40; died, May 27, in the Wesley Memorial Hospital, of bacterial endocarditis.

Harry E. Mayor, Troy Grove, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1900; aged 57; died, May 22, as the result of a cerebral hemorrhage.

Horatio N. Boshell ✠ Melvin, Ill.; Rush Medical College, Chicago, 1895; aged 61; died, May 27, in St. Mary's Hospital, Kankakee, of injuries received in an automobile accident.

Thomas Byron King ✠ Gainesville, Fla.; Atlanta School of Medicine, 1911; on the staff of the Alachua County Hospital; aged 46; died suddenly, May 7, of heart disease.

James J. Rhodes, Cummings, Kan.; University Medical College of Kansas City, 1900; member of the Kansas Medical Society; aged 54; died, May 20, of chronic nephritis.

William N. Edenfield, Vienna, Ga.; University of Georgia Medical Department, Augusta, 1892; member of the Medical Association of Georgia; aged 68; died, April 17.

Maury B. Linkous, Blacksburg, Va.; University College of Medicine, Richmond, 1899; member of the Medical Society of Virginia; aged 59; died suddenly, April 29.

Victor Theodore De War ✠ Grand Junction, Colo.; Northwestern University Medical School, Chicago, 1928; aged 31; was killed, May 26, in an airplane accident.

Alfred Bradley, Barthell, Ky.; University of Louisville (Ky.) School of Medicine, 1909; member of the Kentucky State Medical Association; aged 57; died, April 14.

Frank Sperber ✠ New York; University and Bellevue Hospital Medical College, New York, 1921; aged 35; was killed, May 18, in an automobile accident.

Joseph W. Lowry, Ironton, Ohio; University of Louisville (Ky.) School of Medicine, 1893; aged 66; was found dead in bed, May 24, of cerebral hemorrhage.

Roswell Elmore Flack ✠ Memphis, Tenn.; Johns Hopkins University School of Medicine, Baltimore, 1913; aged 55; died, May 23, of cerebral hemorrhage.

Edward Joseph Sullivan, Boston; Tufts College Medical School, Boston, 1931; aged 27; intern, Boston City Hospital, where he died, May 17, of pneumonia.

Carl Frederick Haish, Santa Ana, Calif.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1897; aged 67; died, March 26.

Leander F. Cain, Caldwell, Ohio; Kentucky School of Medicine, Louisville, 1877; formerly member of the state legislature; aged 76; died, April 27.

Steve Harmon Anderson, Kiln, Miss.; Mississippi Medical College, Meridian, 1907; aged 57; died, May 5, of actinomycosis of the scalp and skull.

W. D. Frederick, Sidney, Ohio; Physio-Medical College of Indiana, Indianapolis, 1884; aged 72; died suddenly, May 10, of cerebral hemorrhage.

John F. Barthell, Howard, S. D.; State University of Iowa College of Medicine, Iowa City, 1891; aged 64; died, April 30, of angina pectoris.

Henry Driessel, Kewaskum, Wis.; Louisville (Ky.) Medical College, 1898; for many years health officer of Kewaskum; aged 80; died, April 25.

Waldo Unruh Kurtz, Wanamassa, N. J.; Trinity Medical College, Toronto, Ont., Canada, 1896; aged 65; died, May 14, of cerebral hemorrhage.

Ross Allen Harris, Los Angeles; Rush Medical College, Chicago, 1899; aged 68; died, April 17, of coccidioidal granuloma with meningitis.

Fouche Warren Samuell, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1886; aged 66; died suddenly, May 13, of heart disease.

James Allen Lynch, Pendleton, Texas; Hospital College of Medicine, Louisville, Ky., 1877; aged 82; died, May 6, of myocarditis.

George W. Haverstick, University City, Mo.; Beaumont Hospital Medical College, St. Louis, 1895; aged 65; died, April 30.

Lorne Drum, Ottawa, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1896; aged 62; died, April 17.

George Hugh McCain, Whitehaven, Tenn.; Memphis Hospital Medical College, 1890; aged 66; died, May 11, of heart disease.

George P. Hitchcock, Los Angeles; Hahnemann Medical College and Hospital, Chicago, 1904; aged 75; died, April 25.

Anna C. Shipley, Seaford, Del.; Woman's Medical College of Baltimore, 1902; aged 65; died, May 8, of heart disease.

Luther Lafayette Sapp, Reidsville, N. C.; Jefferson Medical College of Philadelphia, 1889; died, April 5.

Correspondence

"TRAUMATIC ULCER OF THE DUODENUM AND STOMACH"

To the Editor:—In THE JOURNAL, May 27, Drs. Crohn and Gerendasy report a case and discuss the subject of traumatic ulcer of the duodenum and stomach. The conclusion that "the evidence seems convincing that the trauma caused the ulcer" might be misleading. The reference to "students of gastroenterology refusing to accept the concept of traumatic gastric ulcer" calls for elucidation as to just what this concept is.

The four postulates of Liniger and Molineus satisfactorily exclude cases of pseudo-ulcer but fail to explain why gastroduodenal trauma should be followed by the development of ulcer in certain cases and not in others.

The evidence in the reported case is certainly convincing, that the trauma caused the injury to the duodenal mucous membrane. Of this sequence there can be no reasonable doubt.

Because the intestinal mucosa, like the skin, has an inherent tendency toward repair, something more than the injury is probably necessary to cause chronic ulcer; such as the presence (or absence) of a something in the gastric content or in the body fluids or cells that interferes with spontaneous healing of the damaged duodenal mucous membrane.

Under the heading of pathology it is stated that "the symptoms point to the formation of a true peptic ulceration occupying the seat of the trauma and caused, presumably, by the peptic digestion of the lacerated and blood-suffused mucosal tissue." It is such a condition of hypergastric function or hyporesistance to gastric juice, called "an ulcer constitution and chemism," that may convert a simple contusion, laceration or abnormality of the gastro-intestinal wall into a true chronic ulcer.

It should be emphasized that the trauma may be severe and grossly evident or so slight as to be unappreciated, and that it may be either physical or psychic.

Recognition of the fact that the trauma may be a preliminary factor and not a final cause is not merely academic but may be of medicolegal importance and of therapeutic value.

Treatment should aim at prevention or repair of perforation, hemorrhage or obstruction; at the correction of this "ulcer constitution"; to promote healing of the gastric or duodenal traumatism, and at the avoidance of additional trauma.

GREGORY CONNELL, M.D., Oshkosh, Wis.

"COMMERCIAL ASPECTS OF BACTERIOPHAGE THERAPY"

To the Editor:—I would like to congratulate THE JOURNAL for blasting the commercial aspects of bacteriophage therapy in the issue of May 20. I only wish that the rank and file of the profession would wait for the report of the Council on Pharmacy and Chemistry before swallowing hook, line and all of the bacteriophage panacea.

A valuable article appeared in *Northwest Medicine* (**32**:106 [March] 1933) on "Mobilization of the Reticulo-Endothelial Cells as Aid to Cure," by Dr. S. H. Tashjian of Seattle. He uses nutrient broth, which seems to do everything claimed by different "phagists."

In the clinic with which I am associated we have had similar results with nutrient broth injections for carbuncles, chronic indolent ulcers, varicose ulcers, and a wide variety of infections. Similar results from other clinics and hospitals are daily reported. I think this is a forward step in modern therapeutics with a scientific basis.

O. F. LAMSON, M.D., Seattle.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ANOREXIA IN ADOLESCENTS

To the Editor:—A boy, aged 17, whose family history was negative with the exception that the mother had "stomach trouble" during childhood, had children's diseases of no unusual character and what might have been a mild muscular rheumatism; tonsillectomy was performed two years ago. Since that time he has had no sensation of hunger at all. He complains of some distress in the epigastrium after two days without food, but no hunger. He has vomited once. An urticarial rash has appeared on several occasions. He has lost some weight. His weight is 138 pounds (62.6 Kg.), about normal. His general appearance is good. Nervousness was apparent during the examination. His mental make up is better than usual. The blood pressure at the first examination was 152 systolic, 85 diastolic. At the second examination, some days later, 120 systolic, 75 diastolic. The urine was highly acid but otherwise normal. The diet is of insufficient caloric content. The chief complaint aside from lack of appetite is of fatigue on slight exertion and tremor of the hands. Treatment has consisted of the usual bitter tonics, hydrochloric acid, iron and bromides. Administration of sugar cleared up the tremor and much of the feeling of fatigue. The sense of taste seems to be normal. Otherwise there has been no improvement except a slight gain in weight. Please omit name. M.D., Michigan.

ANSWER.—This unusual anorexia in an adolescent boy may have an organic basis. Anorexia, fatigue and tremor are the only symptoms and signs mentioned. The blood pressure at first examination was, no doubt, elevated by nervousness, as the recorded blood pressure determination would be within normal limits for this patient.

The anorexia, fatigue and tremor might all be caused by a mild degree of hyperthyroidism. Enlargement of the thyroid gland at this age is most commonly a simple colloid goiter. However, eye signs, vasomotor instability and tachycardia, combined with determination of the basal metabolic rate, would aid in the establishment of such a diagnosis.

An incipient tuberculosis at puberty might evidence itself by the signs and symptoms mentioned. Careful physical examination, combined with laboratory sputum and roentgen examinations, would establish the diagnosis of such a condition. A negative tuberculin reaction would be valuable in ruling it out.

Chronic peptic ulcer, of which hunger pain and anorexia are symptoms, is uncommon but not unknown at this age. Ulcer may be associated with allergic manifestations, which could account for the urticarial rash noted on several occasions. An Ewald meal, stool and roentgen examination would aid in the verification of such a diagnosis. If all organic etiologic explanations of the patient's signs and symptoms are found negative, a constitutional or functional disorder must exist. Children with an asthenic constitution are of poor nutrition, with a weak, flabby musculature. The appetite is frequently impaired, and constipation is the rule. Gastric dilatation and ptosis of the abdominal viscera are frequent. Gastric acidity is often diminished or absent. Atony, enteroptosis, neurasthenia and dyspepsia have been considered the most important criteria for the diagnosis of a constitutionally asthenic child.

Asthenia is not uncommon during adolescent life and tends to recede with advancing years. The treatment in such a condition consists in exercise to strengthen the body musculature. Abdominal support for ptosis is of value, and a coarse diet, with plenty of fruits, vegetables, coarse cereals, butter, cream, eggs, milk and sugar will aid constipation and, by adding weight, will help to relieve ptosis and digestive disturbances.

SODIUM AMYTAL AND TRIBROM-ETHANOL AS ANALGESIC IN LABOR

To the Editor:—Can sodium amytal and "Avertin" (tribrom-ethanol) be combined as an analgesic in obstetric practice? What if anything is wrong with the following procedure, if the dose and administration to the patient are proper? In the primary stage of labor, with active regular contractions, ½ grain (11 mg.) of morphine sulphate and 1/150 grain (0.4 mg.) of scopolamine, to be followed in two hours by 6 grains (0.4 Gm.) of sodium amytal, provided this holds the patient fairly comfortable; at the beginning of the second stage of labor, the correct weight dosage of tribrom-ethanol, supplemented with ether if necessary in delivery, and perineal repair. Can sodium amytal be carried further than the 6 grain dose and can the scopolamine be repeated without any bad effects? Please omit name. M.D., Arizona.

ANSWER.—Sodium amytal has been used extensively in obstetrics during the last few years, but opinion concerning its merits is divided. Some praise it unqualifiedly, whereas others are dissatisfied with it. The drug has three major

disadvantages: First, administration requires some technical skill; hence only a physician should administer it and watch the patient (not a nurse). Second, it frequently produces excessive and annoying restlessness, and this requires an increased personnel in attendance. Third, the drug makes necessary an increased number of instrumental deliveries. Some obstetricians have reported a rather large incidence of narcotized or apneic babies. Sodium amytal does, however, produce satisfactory analgesia, amnesia and relaxation of the soft parts.

Tribrom-ethanol has likewise been given an extensive trial by some obstetricians, but this drug has a narrow margin of safety. Therefore it also must be carefully controlled by a physician and not by a nurse. DeLee believes that pregnant women are more susceptible to its deleterious effects than nonpregnant women. The drug is pleasant to take and when combined with an inhalation anesthetic is useful in many cases.

Since either sodium amytal or tribrom-ethanol when used alone may occasionally produce harm if great care is not used, it is unwise to use a combination of them in the same patient. Certainly if morphine and scopolamine are to be used as analgesias and ether as an anesthetic, either sodium amytal or tribrom-ethanol alone will surely suffice and will be far safer than the two combined. It is not advisable to give more than 0.4 Gm. of sodium amytal unless labor is much prolonged, when an additional 0.2 Gm. may be given. A second dose of scopolamine may likewise be administered under the same conditions, but it is best not to give more than a total of 0.6 mg. (1/100 grain) throughout labor.

USE OF MILD SILVER PROTEIN IN NOSE — TREATMENT OF LARYNGITIS IN CHILDREN — ANTISEPTIC TROCHES

To the Editor:—1. Many children struggle on nasal instillations of medication. Do you feel that the instillation of mild silver protein in nasopharyngitis is of more value than the effect of struggling? 2. Is there any objection in using morphine or atropine in treating acute attacks of spasmodic croup (nondiphtheritic) in preference to emetics or inhalations? Kindly suggest the dosage for a child 5 years old. 3. What antiseptic troches, if any, can you suggest for prevention of contagious disease after contact? Kindly omit name.

M.D., New York.

ANSWER.—1. Nasal instillation of mild silver protein is objectionable, not only because it is probably of little value and causes struggling, but also because it discolors the nares, handkerchief and bedding.

2. Morphine should not be used in the bronchitis of children, because of the danger of retention of secretion: hence it should not be employed in laryngitis, because of the likelihood of its being complicated with bronchitis. At the most, minimal doses should be given. The dose of morphine sulphate for a child of 5 may be placed at 0.003 Gm., but probably not more than 1 mg. every two hours for three doses, if required, would be justifiable in laryngitis. Atropine sulphate might be associated with the morphine in one-tenth or one-twentieth the dose of the latter. Codeine phosphate in doses up to 0.005 Gm. might be preferable. Spasmodic croup is composed of two elements: inflammation of the laryngeal mucous membrane and spasm, which is a purely nervous reflex manifestation. Inhalations and nauseant expectorants (such as ipecac) have a favorable effect on the inflamed mucosa and should not be omitted. The nervous element responds, in milder cases, to sodium bromide (0.10 Gm. for each year) with antipyrine (0.05 Gm. for each year) repeated every two hours. In severe cases, chloral hydrate, which might have to be given by rectum in dosage of from 25 to 50 cc. of a 1 per cent solution in starch water, is useful. These sedatives, because less specifically antitussic, are safer than the opiates in this condition.

3. There are no such troches. There is nothing powerful enough to disinfect the mouth that could be used in this form.

MALARIA IN TEXAS

To the Editor:—Is malaria prevalent enough in Texas to warrant taking prophylactic doses of quinine? My patient had the disease while working in that state last year and has come to me for advice, as he is to return there in the near future. Please omit name.

M.D., Connecticut.

ANSWER.—The advisability of taking prophylactic quinine in this case involves both the severity of malaria in Texas and the general question of the effectiveness of such prophylaxis. Compared to most tropical countries the eastern half of Texas, where most of the malaria occurs, presents only a moderate malaria problem. Furthermore, although there is still considerable difference of opinion as to the effectiveness of prophylactic quinine, there is a mass of evidence that in the doses usually employed it will not prevent infection although it may hold down the acute clinical symptoms of the initial attack and allow the body to acquire a partial immunity to the infection while still harboring the organism. In view of these considerations, it is recommended that the patient be not given so-called prophylactic quinine but that he be advised at the first suggestion of an attack of malaria to consult a physician for diagnosis and early treatment.

USE OF DRYCO AS NONSPECIFIC PROTEIN IN PLACE OF MILK NOT RECOMMENDED

To the Editor:—I have been using milk injections more or less with impunity for nonspecific protein therapy and recently had the bright idea of making a solution from Dryco, which appeared to me to be ideal in that it was a low fat containing natural milk product. Following the first intramuscular injection in a case of chronic gonorrhea the patient experienced a terrific reaction, which I could not associate with milk from my previous experiences. As an afterthought I looked on the can and found a note which showed that all drug store Dryco is irradiated. Naturally, I attributed the reaction to this activation. Could you give me any information on this subject? Are there any reports or references to any literature on the effect of parenteral administration of irradiated biologicals?

M.D., California.

ANSWER.—In the absence of specific knowledge or experience, it is believed that the observations of the correspondent on injected irradiated Dryco would be entirely logical. Irradiation with ultraviolet rays is known to affect proteins, and, in certain cases, irradiated Dryco or, in fact, other irradiated protein material might give the reaction noted.

Though no references in the medical literature shed light on the question, there is ample technical evidence to the fact that the nature of protein material is altered by irradiation. In the present instance, however, this particular reaction should not be accepted as a specimen case. The question of reaction when protein is injected into the blood stream always involves susceptibility of the individual. Whether the case in hand is typical of milk protein or whether the idiosyncrasies of the patient are the dominant factor is something that could be determined only by further investigation.

In promiscuously injecting unknown milks, one would seem to be taking a long chance, and many things might happen which could be accounted for other than by irradiation to which Dryco has been subjected. As one authority sees the matter, injection of promiscuous milks, because they happen to be milk, is not considered to be ideal practice.

INSULIN REACTION IN DIABETES

To the Editor:—A woman, aged 44, has been taking insulin for several years and for some time now has presented this problem: The insulin dosage is 30-25-5 units for meals. The urine clears of sugar after the evening meal, but she is awakened about 1 or 3 a. m. with marked nervousness, sweating and hunger. Sometimes she takes a little orange juice and sometimes she takes nothing; but the first specimen she passes in the morning before breakfast always shows heavy sugar. Omitting the evening dose of insulin eliminates this reaction. At the time of the reaction, the urine is sugar free. I have used low carbohydrate diets and am now having her on a diet of 150 Gm. of carbohydrate, 60 Gm. of protein and 110 Gm. of fat. I would appreciate any advice you might give me that I might eliminate the insulin reaction during the night and at the same time clear up the morning glycosuria. Please omit name.

M.D., Iowa.

ANSWER.—A case such as described always presents a difficult problem. Physical activity seems to have a great influence on the carbohydrate balance in such patients and it is sometimes impossible to avoid early morning glycosuria without disturbing the normal daily routine. From the point of view of the patient's welfare, it is doubtful whether such glycosuria is harmful, provided the diabetes is well controlled through the rest of the twenty-four hours. However, if it is considered worth while disturbing the present control of the case, the following rearrangement of the dosage of insulin might be tried: breakfast, 35; lunch, 0; dinner, 15; bedtime (say 11 to 12), 10 units. This should allow the patient to go to bed with a higher blood sugar level, so that no reaction ought to be expected at 1 or 2 in the morning. The bedtime dose of insulin, however, should reach the height of its effect at about the time the patient's blood sugar naturally rises and may thus eliminate the early morning glycosuria. It may be safer, in this case, to try the breakfast and dinner doses only, for a day or two, before starting the bedtime dose, in order to become quite certain that the patient is going to bed with a moderately high blood sugar level. The size of the suggested doses are, of course, only guesses and should be readjusted according to the reaction of the patient. The higher carbohydrate diet now being received should favorably influence the treatment.

TOXICITY OF ACRIFLAVINE USED INTRAVENOUSLY

To the Editor:—The following statement is taken from a booklet compiled by a leading physician: "Gonorrhoea—In the Male. Inject intravenously 5 cc. of a 2% solution of neutral acriflavine (Abbott). A daily injection is given for the first week and 3 times weekly thereafter for from 12 to 36 injections, the minimum and maximum, respectively, that I have found necessary for complete cure. No other treatment is necessary though there is no objection to combining with local treatment if so desired." Please let me know what THE JOURNAL thinks of it. Would the procedure be safe? Please omit name and address.

M.D., Georgia.

ANSWER.—P. J. Crittenden (*J. Pharmacol. & Exper. Therap.* **44**:423 [April] 1932) states that certain preparations of acriflavine are definitely toxic, causing changes in the heart rate, circulation and respiration and nausea and vomiting in intravenous doses of from 2 to 5 mg. per kilogram. A neutral preparation of acriflavine can be prepared which in doses of from 1 to 2 mg. per kilogram causes slight or no changes in the heart rate, respiration and blood pressure. Even the least toxic preparation of acriflavine in small doses stimulates and in larger doses depresses the peripheral vagal mechanism of the heart.

Heathcote and Urquhart (*J. Pharmacol. & Exper. Therap.* **38**:145 [Feb.] 1930) were prompted to study the pharmacologic and toxicologic actions of acriflavine because of two deaths after the intravenous use of the drug, one death being due to jaundice and the other to acute yellow atrophy. Experiments on dogs and rabbits showed that a dose of 30 mg. of acriflavine per kilogram intravenously caused death in one hour, with symptoms first of respiratory failure with asphyxia, and then the heart ceased to beat. In fifteen dogs, the pathologic examination revealed marked changes in the kidneys and the liver.

ADDICTION TO ACETANILID

To the Editor:—I have had a good deal of experience taking patients off of narcotics and have found that, when the drug is stopped all at once, instead of a tapering off the patients have delusions and hallucinations. A few months ago I had occasion to attend a man who had been in the habit of taking about 60 grains (4 Gm.) of acetanilid a day. His lips were bluish and his skin was chalk-like. I stopped the drug immediately, and for about ten days the patient was a raving maniac. I have had experience with one other person who used acetanilid by sniffing. The effect produced on the patient, in this instance, was the same as found in a cocaine fiend. 1. Will acetanilid taken by mouth in quantities as large as 60 grains a day cause the patient to become addicted to the use of the drug, as a dope fiend would to any other narcotic? 2. Will the reaction be the same as far as mental disturbances are concerned as that of a morphine or cocaine addict if the drug is stopped all at once. 3. Will the mental condition produced by the taking of 60 grains of acetanilid a day be on a par with that of any other dope fiend while under the influence of the drug? Please omit name.

M.D., South Carolina.

ANSWER.—1. There is no doubt that acetanilid addiction can and does occur.

2. While the reaction to sudden deprivation of the habituated drug may be similar to that of sudden withdrawal of morphine or cocaine, such is usually not the case.

3. No. The euphoria-producing tendencies of morphine and cocaine are notoriously greater.

URTICARIA PIGMENTOSA

To the Editor:—I should appreciate your giving me some information with regard to treating and diagnosing a case I have. The patient, a girl, aged 3, has had an urticaria since she was 3 weeks old. It resembles the picture of urticaria pigmentosa in the Atlas of Diseases of the Skin put out by P. Blakiston's Son & Co. At times it seems to be made worse by milk. She has a dry skin and is very nervous. I treated the father for syphilis about three years before the child was born. He had a negative Wassermann reaction before he married and it has been negative ever since. The child's blood and the mother's have been negative each time I have had it examined. Please omit name.

M.D., Florida.

ANSWER.—Urticaria pigmentosa is not urticaria and has no relation to syphilis. Its etiology is unknown, though many authorities hold that it is a form of nevus. Milk should not be blamed unless it can be shown definitely to cause increased itching. The dry skin should be protected from the drying effect of soap and hot water; after the bath, ointment of rose water should be applied. Oatmeal water may be used for the bath. If this does not prevent itching, two parts each of Pusey's calamine liniment, calamine powder and zinc oxide in sixteen parts each of solution of calcium hydroxide and olive oil may be used frequently, an antipruritic, such as coal tar solution, from 5 to 10 per cent, being added if necessary. In certain cases the brown spots have gradually disappeared after some years, in others they have persisted indefinitely. The only treatment that may affect them is radiotherapy, suberythema doses of x-rays or radium. Larger doses are not justified. This should be tried preferably on one spot first. The disease is harmless aside from the cosmetic defect.

The child in question should be watched for signs of syphilis until after puberty; but no treatment for syphilis should be given until it is shown to be present.

DETERMINING FUNCTIONAL POWER OF TESTIS

To the Editor:—A man, aged 44, was operated on for hydrocele. In the operative procedure the surgeon cut through the skin, muscles and tunica and sliced deeply into the testicle, which at that time was perfectly normal. When the testicle was incised, the incision extended deeply, in fact, almost half the tubules poured out of the incision and much of the tissue was wiped away with sponges. It was one of those accidents that do occur. The testicle proper was sutured and a typical bottle operation was performed for the hydrocele. After the operation, which took place July 5, 1918, the hydrocele promptly recurred, was and is now quite large, and has persisted from the date of operation to the present. At a later date, in 1919, the patient married and became the father of two children, one born in 1920, the other in 1922. At present examination the traumatized testicle is approximately three or four times the size of the normal testicle. The patient claims that he has lost the procreative power of the enlarged, highly sensitive, exquisitely tender testicle, which opinion is concurred in by several examining physicians and surgeons. There is no evidence of a tendency toward malignancy. What I want to know is, What means or what method of procedure or examination can a physician undertake to determine whether or not procreative power has been lost? That is the question that must be determined. I know of no way of determining the absolute facts except by the presumptive evidence of loss of function as manifested by hypertrophy, hyperplasia, the engorgement, loss of tubules and scar tissue and presence of recurrent hydrocele extending up and involving the cord and the external ring of the inguinal canal. I will thank you for an opinion on this case and also citation of authorities. Please omit name.

M.D., Texas.

ANSWER.—There are two ways of determining more or less accurately the procreative function of a testicle. One is to catheterize the ejaculatory duct on the side through the posterior urethroscope and examine the fluid thus obtained for spermatozoa. The other method is to stick a rather large aspirating needle attached to a syringe into the testicle and epididymis and aspirate these parts and examine the aspirated fluid thus obtained for spermatozoa. The latter procedure is simple but gives no information as to the permeability of the various tubes that convey the spermatozoa from the testicle to the urethra.

INJECTION OF VAS FOR VESICULITIS

To the Editor:—What is the status of injections into the vas with disinfectants for chronic vesiculitis in old cases of gonorrhea? If advisable, what chemicals are best suited?

G. W. MONTGOMERY, M.D., Caldwell, Idaho.

ANSWER.—The injection into the vas deferens of various germicidal drugs for the treatment of chronic vesiculitis has had extensive trial and has proved of but questionable benefit. The necessity of incising the duct in order to inject the germicidal solution adds to a somewhat minor surgical procedure the possibility of postoperative stricture, which is increased if the fluid injected is at all irritating. Moreover, the necessity of making a skin incision in order to reach the duct tends to make a repetition of the procedure unlikely and, as a single injection of any medication is seldom curative, the method has been generally abandoned by the majority of urologists or only occasionally employed in the more refractory cases, usually with disappointing results. Mild silver protein preparations are the drugs most frequently used.

DOSAGE OF IRON AND AMMONIUM CITRATE

To the Editor:—Dr. V. C. Rowland, in his article "Anemia of Pregnancy" (THE JOURNAL, February 25, p. 539), recommends the use of massive doses of iron—from 90 to 120 grains (6 to 8 Gm.) daily—in treating the hypochromic type of anemia. He then suggests a 50 per cent solution of iron and ammonium citrate in drachm doses. The quantity of iron in a drachm dose of a 50 per cent solution of iron and ammonium citrate is about 5 grains (0.3 Gm.). I am wondering whether or not the "massive doses" refer to the iron salt recommended, rather than to the iron itself. The Epitome of the U. S. P. states that iron and ammonium citrate "contains about 17 per cent of iron." Please omit name.

M.D., Long Island, N. Y.

ANSWER.—Dr. Rowland writes: "The dose of 90 to 120 grains refers to the salt, iron and ammonium citrate. In speaking of massive doses of iron, the term 'iron' is used in a general sense without reference to the particular form or salt used. This dosage is 'massive' in comparison with the commonly used amounts of iron previous to the newer methods in the treatment of anemia."

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, July 11-14. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

CALIFORNIA: *Regular.* San Francisco, July 10-13 and Los Angeles, July 24-27. *Reciprocity.* Los Angeles, July 24. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 5-8. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Regular.* Hartford, July 11-12. *Endorsement.* July 25. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* New Haven, July 11. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 29-30. *Regular.* Washington, July 10-11. Sec., Dr. W. C. Fowler, 203 District Bldg., Washington.

MAINE: Augusta, July 5-6. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, July 11-13. Sec., Dr. Stephen Rushmore, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* The examinations will be held at centers where there are five or more candidates, Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NORTH DAKOTA: Grand Forks, July 5-8. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OREGON: Portland, July 4-6. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 11-15. Sec., Mr. Charles D. Koch, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, July 6-7. Dir., Dr. Lester A. Round, 319 State Office Bldg., Providence.

SOUTH DAKOTA: Watertown, July 18. Dir., Dr. P. B. Jenkins, Waubay.

WASHINGTON: *Basic Science.* Seattle, July 13-14. *Regular.* Seattle, July 17-18. Dir., Mr. Harry C. Huse, Department of Licenses, Olympia.

Oregon February Report

Dr. Joseph F. Wood, secretary, Oregon State Board of Medical Examiners, reports one physician licensed by reciprocity and one by endorsement, Feb. 1, 1933. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Lincoln Medical College of Cotner University		(1899)	Nebraska
College	**LICENSED BY ENDORSEMENT**	**Year Grad.**	**Endorsement of**
St. Louis University School of Medicine		(1931)	N. B. M. Ex.

Vermont February Examination

Dr. W. Scott Nay, secretary, Vermont State Board of Medical Registration, reports the written examination held in Burlington, Feb. 14-16, 1933. The examination covered 12 subjects and included 90 questions. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. The following college was represented:

College	PASSED	Year Grad.	Per Cent
University of Vermont College of Medicine	(1931) 90.3, (1932)		90.4

West Virginia March Report

Dr. David Littlejohn, acting secretary, Public Health Council of West Virginia, reports the oral, written and practical examination held in Charleston, March 14-16, 1933. The examination covered 12 subjects and included 120 questions. An average of 80 per cent was required to pass. Two candidates were examined, both of whom passed. Thirteen physicians were licensed by reciprocity with other states and one physician was licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Medical College of Virginia	(1931) 84.2, (1932)		89

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University School of Medicine		(1931)	Maryland
Georgetown University School of Medicine		(1920)	Dist. Colum.
University of Georgia Medical Department		(1931)	Georgia
Chicago Hospital College of Medicine		(1917)	Illinois
University of Louisville School of Medicine		(1928)	Kentucky
University of Maryland School of Medicine		(1901)	Georgia
University of Maryland School of Medicine and College of Physicians and Surgeons		(1929)	Maryland
Ohio State University College of Medicine		(1921)	Ohio
University of Tennessee College of Medicine		(1925)	Tennessee
Medical College of Virginia		(1930) (1929), (1931)	Ohio, Virginia
University of Virginia Department of Medicine		(1924)	Virginia

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Johns Hopkins University School of Medicine		(1926)	N. B. M. Ex.

Book Notices

Surgical Pathology of the Diseases of Bones. By Arthur E. Hertzler, M.D., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas. Hertzler's Monographs on Surgical Pathology. Cloth. Price, $5. Pp. 272, with 211 illustrations. Philadelphia: J. B. Lippincott Company, 1931.

The author gives a clear exposition of all the chief diseases and tumors of bone. The acute inflammatory diseases of bone are divided into those resulting from infection from without and those of the blood-borne type. A chapter is added on osteomyelitis in special regions. The clinical features and the gross and microscopic pathology are excellently handled. As in the rest of the book, treatment is not emphasized and the author confines himself strictly to the pathologic features of the disease which he feels will be of benefit to the clinical surgeon. The chapters devoted to chronic inflammation of bone and to specific infection are perhaps too brief. Paget's disease and von Recklinghausen's osteitis fibrosa cystica are included in these chapters with questionable justification. The more common conditions of chronic osteomyelitis, Brodie's abscess, Garre's sclerosing osteitis, tuberculosis and syphilis are well described. A brief review is given of bone diseases of unknown origin, including those dependent on metabolic disturbance about which definite etiologic factors are known, such as rickets and scurvy.

Part II is devoted to tumors of bone. The chapter on osteomas includes hyperostoses, ossifying hematoma and exostoses, in which the distinction between osteochondroma and osteomas forming in membranous bones are not adequately drawn. This does not detract from the excellence of the pictures chosen to illustrate the various types. In the chapter on chondromas, the author is on surer ground. This is true also of the chapters on myositis ossificans and the chapter devoted to both giant cell tumor and bone cysts. By far the best chapters on bone tumors are those devoted to osteogenic sarcoma. Here the cases and illustrations are well chosen and unusually complete. This is true also of the discussion of Ewing's sarcoma. Multiple myeloma is briefly considered, as is metastatic carcinoma.

The entire book is compact, is easily read and forms an excellent introduction to the subject for the student and the busy surgeon. As a reference book many of the entities discussed are too briefly presented, and some listed in the author's own classification, such as chloroma and lipoma, are entirely omitted.

Diseases of the Eye. By Hofrat Ernst Fuchs. Authorized translation by E. V. L. Brown, M.D., Professor of Ophthalmology, University of Chicago. The fifteenth German edition of the "Lehrbuch der Augenheilkunde" as revised by Maximilian Salzmann, Professor of Ophthalmology, University of Graz, Austria. Tenth English edition. Cloth. Price, $7. Pp. 641, with 296 illustrations. Philadelphia, Montreal & London: J. B. Lippincott Company, 1933.

The appearance of a new edition of Fuchs has been awaited eagerly by American ophthalmologists. The last English edition was published in 1924. Since that time both Professor Fuchs and his veteran translator, Alexander Duane, have died, but one feels that the demand for this great textbook will continue and will justify the publishers in undertaking this new translation. The choice of Dr. Brown, long a disciple of Professor Fuchs, translator of Salzmann's Anatomy of the Eye and an authority on the teaching of ophthalmology, to undertake this work was a fortunate one. The idea of publishers and translator was to produce a suitable and not too expensive textbook for American undergraduates. They have therefore reduced the size of the present edition by nearly 400 pages. The chapter on refraction, written by Duane, has been omitted, in accordance with the translator's belief that refraction should not be taught to American undergraduates. For the same reason the chapter on ophthalmic operations has been omitted.

The chapters on anatomy, physiology, pathology and therapeutics have been omitted as special sections, but much of their material, especially that on anatomy, has been redistributed at the heads of various chapters. Thus, eight pages are devoted to the anatomy of the cornea, fourteen to that of the uveal tract and five to that of the retina and optic nerve in the corresponding chapters, an arrangement with obvious advantages. In this arrangement and in all other respects the author has closely followed the fifteenth German edition, as revised by Professor Salzmann. An important addition to this edition over earlier ones is the colored fundus pictures. Forty-one of these, drawn by Salzmann and well reproduced, illustrate most of the common and some of the less common ophthalmoscopic conditions. This replaces the twenty-two fundus plates of previous editions. A valuable chapter on the central visual pathways has been added, apparently Professor Salzmann's contribution. Duane's well known chapter on motor anomalies, which was a feature of later English editions, has been replaced by one half as long but excellent in its clearness and choice of the most important matter.

It is hardly necessary to emphasize the qualities that have made this textbook a classic in the teaching of ophthalmology all over the world. Fuchs was essentially a great clinician and his valuable discussions of pathology are not allowed to crowd out his clear and vivid description of the clinical observations necessary for diagnosis, descriptions that have never been excelled. The translation is more literal than that of Duane, occasional instances of quite Germanic structure being carried over into the English text. It is apparently a completely new translation and, on the whole, is clear and readable.

One might criticize the absence of any translator's notes which would bring certain subjects down to date. Thus, it is strange to see the old description of "rheumatic" iritis given without any mention of focal infection by one who knows his focal infections as Dr. Brown does, while in the Duane edition so-called rheumatic iritis and gonococcal iritis were grouped as focal iritis, with proper reference to the importance of various common foci. Another classic concept that seems to require a note of modification is the belief of Fuchs that closure of the central retinal artery is nearly always due to an embolus. The work of Harms and Scheerer seems to leave no room for doubt that many if not most of such cases are due to endarteritis and other causes. One might also object to the statement of Fuchs that "therapy is as good as powerless against sympathetic ophthalmia, once it has broken out." On the whole, however, one need hardly quarrel with an authority who was right as often as was Professor Fuchs. Dr. Brown, in following the word of the master as something almost sacred, has rendered English-speaking ophthalmologists a signal service.

Text-Book of Ophthalmology. By W. Stewart Duke-Elder, M.A., D.Sc., M.D., Surgeon, Royal London Ophthalmic (Moorfields) Hospital. Vol. I: The Development, Form and Function of the Visual Apparatus. Cloth. Price, $15. Pp. 1124, with 1029 illustrations. St. Louis: C. V. Mosby Company, 1933.

In the past, textbooks in ophthalmology have been written to appeal to both the undergraduate student and the graduate. This volume is a textbook which offers at the end of each subdivision an adequate and thoroughly up-to-date bibliography, sufficiently broad to enable one seeking further literary references to obtain the necessary clues. The first volume is entirely devoted to the fundamental sciences on which a thorough understanding of ophthalmology rests. It contains eight sections, on the phylogeny of the visual apparatus, the anatomy and comparative anatomy of the visual apparatus, the ontogenic development of the visual apparatus, the physiology and biochemistry of the eye, optics, the physicochemistry of vision, and the physiology of vision including visual sensations.

Owing to the size of the volume, it is obviously impossible to discuss it in detail. The various sections are well written, give evidence of careful thought and judgment, present the modern proved concepts of the various subjects, and cover ophthalmologic fundamentals in a way that is not even approached in any other single volume. For example, until Adler's book on physiology appeared within the past few weeks, there was not a single volume anywhere that dealt with ophthalmic physiology in toto; but this textbook touches on all phases of the subject and gives the reader an insight into the physiologic work that to the average ophthalmologist is unknown territory.

This textbook is one of the best that has ever appeared in English. If the succeeding volume or volumes, as the case may be, maintain the high standard set by the first, English speaking ophthalmologists will not have to make such frequent reference to Teutonic literature as has been necessary in the past.

Operative Surgery Covering the Operative Technic Involved in the Operations of General and Special Surgery. By Warren Stone Bickham, M.D., and Phar.M., F.A.C.S., Junior Surgeon to Touro Hospital, New Orleans, and Calvin Mason Smyth, Jr., B.S., M.D., F.A.C.S., Assistant Professor of Surgery, Graduate School of Medicine, University of Pennsylvania. Volume VII. Cloth. Price, $10. Pp. 849, with 765 illustrations. Philadelphia & London: W. B. Saunders Company, 1933.

Eight years ago the first six volumes of this work were published. The present volume is an effort to bring the work up to date by adding those operative procedures which have in the last few years become established. The book does not describe every operation that has recently been disclosed but includes only the more important ones. Since anesthesia has developed rapidly within the last few years, the opening chapters are on that subject, giving special attention to paravertebral, splanchnic and spinal anesthesia, to the rectal administration of ether and oil and to ethylene gas and its administration. Among others is a discussion on excision of the lobe of the lung, on apicolysis for collapsing a tuberculous cavity, and a description of operations for removal of intrathoracic tumors and for repairing a hernia of the lung. There are chapters on operations on the heart, on the intestine and on the urinary tract, on the prostate and the seminal vesicles, for undescended testicle, on operations on the blood vessels and sympathetic nervous system, on ganglions, a chapter on suture and ligature materials, and one on the postoperative care of surgical patients. The volume is well illustrated. It closes with an index to volume VII and a separate general index to volumes I to VI.

Cardiovascular Pain as a Biochemical Problem. By Gordon Lambert, B.A., M.D., B.C., Senior Hon. Physician and Physician in Charge of Electrocardiographic Department, Royal Berkshire Hospital. With a foreword by Maurice Alan Cassidy, C.B., M.A., M.D., Physician Extraordinary to H. M. The King. Boards. Price, 6s. Pp. 75, with 23 illustrations. London: H. K. Lewis & Company, Ltd., 1933.

Lambert makes no claim that he has settled the question of anginal, or, as he prefers to call it, cardiovascular, pain. His object is to show the weak spots in the prevailing theories and to urge a greater concentration of investigation on the possibility, or the probability, of a chemical explanation. He asserts that investigations based on morbid anatomy have not solved the problem, though he does not go so far as to rule out pathologic conditions of the heart and aorta as having something to do with the production of pain. The logic of the author is often loose. His pages contain too frequently such expressions as "impression," "suspicion," "assumed," "one ventures to suggest," "doubtless," "perhaps." In other words, there is a lack of proof based on clinical, anatomic or laboratory facts that seriously detracts from the value of the work. One may agree with the laudable desire to stimulate study directed along biochemical lines, but such work must be done in a more scientific manner than that manifested in the writing of this monograph. The expressed and veiled criticisms contained in the foreword by Maurice Alan Cassidy are sensible and to the point.

Medizinische Praxis: Sammlung für ärztliche Fortbildung. Herausgegeben von Prof. Dr. L. R. Grote, Chefarzt der C. von Noorden Klinik, Frankfurt a. M., Prof. Dr. A. Fromme, Direktor der chirurgischen Abteilung des Stadtkrankenhauses Dresden-Friedrichstadt, und Prof. Dr. K. Warnekros, Direktor der Staatlichen Frauenklinik zu Dresden. Band XV: Chirurgische Tuberkulose. Von Dr. med. Max Flesch-Thebesius, leitender Arzt der chirurgischen Abteilung am Privatkrankenhaus Sachsenhausen, Frankfurt a. M. Mit einem Geleitwort von Prof. Dr. V. Schmieden, Direktor der chirurgischen Universitätsklinik, Frankfurt a. M. Paper. Price, 15 marks. Pp. 194, with 58 illustrations. Dresden & Leipzig: Theodor Steinkopff, 1933.

The monograph "Surgical Tuberculosis," by Dr. Flesch-Thebesius, is one of a series of medical monographs composing Medizinische Praxis. This book deals especially with bone and joint tuberculosis. Tuberculosis of the lungs, abdomen and genito-urinary tract are covered in other monographs. The author calls attention to the fact that formerly under the general heading of surgical tuberculosis were included those types of tuberculosis which were considered amenable to surgical treatment; in short, surgery of the bones, glands, intestine

and genito-urinary system in contradistinction to tuberculosis of the lungs, in which surgery was presumably of no avail. With the improvement in methods of conservative treatment, tuberculosis of the bones and joints is rapidly becoming the nonsurgical type of tuberculosis, while at the same time the improvement of surgical collapse therapy has changed the treatment in pulmonary tuberculosis from medical to surgical in a large proportion of cases. The author of this book on surgery of the bones and joints feels that both medical and surgical treatment have their place. He has, however, retained for the title of his work the old name surgical tuberculosis. He has derived his knowledge of the subject he is writing on from experience in the clinic, the sanatorium and private practice, and therefore he appreciates the advantages and the limitations of each of these three institutions. The book is written especially for the general practitioner and every effort is made to prescribe such therapy as the general practitioner can carry out. A particular point has been made in trying to answer some of the knotty questions frequently proposed to the man in general practice; for example, the relationship between trauma and tuberculosis of the bones and joints. These questions have been answered in a way that will help the general practitioner to reply to similar questions from his patients. The book is well illustrated, is short and concise, and will probably appeal to German speaking physicians either in industrial or in general practice.

Flynn of the Inland. By Ion L. Idriess. With forewords by Sir Sidney Kidman and Ronald G. Macintyre, C.M.G., O.B.E., D.D. Sixth edition. Cloth. Price, 6/-. Pp. 306, with 35 illustrations. Sydney, Australia: Angus & Robertson, Ltd., 1932.

This is a true story entertainingly written of the great effort of John Flynn to serve the inhabitants of the sparsely settled inland empire of Australia: the lonely prospector, the ranchman, and the children of these people. That vast land of good country and poor awaits the release of untold mineral and agricultural riches; its people are isolated in twos, tens and twenties, hundreds of miles from medical and spiritual aid. John Flynn dreamed of providing these settlers with some of the bare necessities of medical service. He spent years in the inland, coming out now and then to further the organization of the Australian Inland Mission and to lecture in cities to arouse interest in the welfare of these people. The mission established nursing homes and small hospitals. John Flynn has lived to see physicians summoned by radio and traveling great distances by airplane into the inland to attend these isolated people. A leaf from the diary of one of these flying doctors follows:

Flew "bush" to a locality where there was no landing-ground. Advised patient's friends to take him by car to a meeting-place thirty miles distant. Patient very ill, but began to improve when we got him to Cloncurry Hospital.

Called by telephone two hundred and twenty-three miles to baby with malaria fever. Quick flight.

Called by telephone one hundred and twenty miles; found husband, wife, and two children under poor conditions in isolated situation. Parents simultaneously overcome by a melancholic form of insanity and had been found wandering at large in the bush. Advised removal to medical centre.

Called two hundred and twenty-three miles. Bumpy flight. Saw woman suffering from malaria. Other cases: baby, two sick women, aboriginal with septic hand, Japanese with synovitis, contusions of foot and leg.

Called one hundred and seventy-five miles. Swift flight—clear day. Baby fifteen months, acute enterocolitis (?) meningitis. Transported to hospital. Patient's condition apparently not adversely affected by flight.

Advised man by letter re tumor on face.

Advised Mornington Island by wireless re patient suffering from skin rash.

Heard of man suffering from fracture of humerus. Unable to go out owing to absence of pilot in Normanton. Advised taking patient to Burketown Hospital. Two days later flew to Burketown but patient had not arrived.

Advised Mornington Island by wireless—child suffering from epilepsy.

Flew to Normanton on mail machine at request of local doctor who was absent. Good opportunity to demonstrate possibility of flying-doctor's co-operation. QANTAS generously gave complimentary ticket for trip.

John Flynn has been likened to Wilfred Grenfell, who has done similar things for the natives in the ice-bound coast of Labrador. Like Grenfell, Flynn has gone abroad to see what is being done for pioneers elsewhere. This book will interest people who live in large cities, those who sometimes forget the stars and the moon and who sometimes fail to realize the value and interest of living in the great outdoors.

Time to Live: Adventures in the Use of Leisure. By Gove Hambidge. Cloth. Price, $1.50. Pp. 144. New York & London: Whittlesey House, McGraw-Hill Book Company, Inc., 1933.

Who would not appreciate more "time to live"? Who would not enjoy, in the words of the subtitle of this book, "adventures in the use of leisure"? The author has painted an alluring picture of what, to him, constitutes the "life of Riley." He is plainly one of those primitive souls to whom a routine is stifling; he prefers the adventure of uncertainty, even if it includes hardship, to the monotony of security. He abandons—in these times—a job and a pay-check and takes to free-lance writing, a precarious occupation at any time, as he knew when he took the step. For persons with his tastes, the life he describes is ideal—far from the madding crowd, in bucolic surroundings, living the simple life for all it is worth and getting the last ounce of savor out of it. Of course, there are those to whom such a life would not appeal, who would feel as seriously bored in the rural scene as he felt confined and stifled in urban environment. Each to his taste. Regardless of the kind of surroundings a given person may prefer, there is much to be learned from Mr. Hambidge's plea that we take time to live, to play, to enjoy handicraft, gardening, painting (even if we daub) and companionship of our loved ones. He would make life more of an art and less of a business. To him the five hour day and the five day week, or even less, spell opportunity and time to live, even if they may require us to lop off some of the so-called trimmings of civilization and get down to essentials, even to working again with our hands. Machinery is to him nothing more than an opportunity to get time for handicrafts. He paints a fascinating picture. We know that we ought to take his advice, but probably we shall just pass a delightful hour reading and approving his philosophy and then with a sigh go back to the same old treadmill.

A Further Study of Dental Clinics in the United States. By Miriam Simons Leuck, of the Research Staff of the Committee on the Study of Dental Practice of the American Dental Association. Statistical Adviser: Charles A. R. Wardwell, Assistant Professor of Statistics and Finance, Northwestern University. Publications of the Committee on the Study of Dental Practice of the American Dental Association, No. 4. Paper. Price, $1.50. Pp. 179. Chicago: University of Chicago Press, 1932.

This publication of the Committee on the Costs of Medical Care presents an analysis of clinics for the care of the teeth in association with hospitals, industries, schools and dental schools. Most of the information contained was developed by the questionnaire method. It is recognized that dentists in private practice are confronted with the same problems that concern physicians so far as relates to the operation of dental clinics. Because the information developed is rather inadequate, the book serves largely merely to indicate the nature of the problem and its extent without offering opportunity for definite conclusions. Apparently there are 1,933 dentists employed in various dental clinics. They work for salaries, although in large clinics much of the service is donated by volunteers. Most dental clinics are, of course, located in metropolitan centers. In these clinics there is an additional thousand employees who are not trained as dentists but who aid in the work. During 1930 the clinics cared for approximately a million and a half of people. The clinics seem to be increasing at a rate which will involve the treatment of three million patients in 1938. All types of dental service are rendered. It is found that dentists working for clinics have median net earnings of approximately $2,848.00 a year, or $1,246.00 less than that of a median dentist in private practice.

Studies on the Nutritive Value of Milk. II. The Effect of Pasteurization on Some of the Nutritive Properties of Milk. By W. E. Krauss, J. H. Erb, and R. G. Washburn. Bulletin 518. Paper. Pp. 33, with 8 illustrations. Wooster, Ohio: Agricultural Experiment Station, 1933.

This bulletin includes a review of the literature and the experimental procedure followed in the study of the effects of raw and pasteurized milk on anemia development, growth and calcification in albino rats and the influence of pasteurization on vitamins A, B, D and G and curd tension. Albino rats developed nutritional anemia at the same rate when fed exclusively on raw or pasteurized milk. No loss of iron or copper occurs during pasteurization of milk. When milk fortified with copper and iron exclusively to eliminate the anemia factor is fed, no significant difference is apparent in the total

nutritive effect of raw or pasteurized milk. The calcium and phosphorus in the two forms of milk are equally available. Pasteurization does not affect vitamins A, D and G but does destroy at least 25 per cent of the vitamin B originally present. Pasteurization slightly reduces the curd tension of milk. The nutritive deficiencies of pasteurized milk, vitamins B and C, can be readily overcome by proper dietary control. The continued use of pasteurized milk offers no serious problem from the human standpoint.

Diseases of the Eye. Practitioner's Series. By Andrew Rugg-Gunn, M.B., F.R.C.S., Surgeon to the Western Ophthalmic Hospital. Cloth. Price, 12s. 6d. Pp. 188, with 34 illustrations. London: William Heinemann, Ltd., 1933.

This brief textbook treats of ophthalmology from the point of view of familiarizing the physician with the essential diseases of the eye that he will be called on to take care of in the course of his daily routine. The subjects covered are essentially conjunctival inflammations, the commoner inflammations, iritis, syphilis of the eye, cataract, glaucoma, the commoner tumors of the eye, the type of retinitis seen with general disease, and the various ocular palsies. For the scope intended, the book is quite sufficient. It does not discuss refraction or surgery and for that reason it would not serve as a textbook for the beginning ophthalmologist. It compares favorably with similar books on the subject.

Medicolegal

Foreign Bodies and the Doctrine of Res Ipsa Loquitur

(Pendergraft v. Royster (N. C.), 166 S. E. 285)

The plaintiff sued the defendant, alleging that after an operation he left in her body a glass drainage tube which had been broken, or at the time of dressing her wound used gauze packing which had embedded in it broken pieces of a glass tube, which, on the removal of the packing, were allowed to remain in her body. The defendant had operated on her, Jan. 24, 1929, to cure certain conditions, among them a misplaced uterus and lacerations of the cervix. According to her testimony, she made a good recovery and was well satisfied with her condition, when, on or about April 28 next following the operation, while she was working in her garden, a pain struck her, seemingly, she said, "in the very bottom of my stomach." She sat on the edge of a chair, placed her finger on the mouth of her womb, felt a foreign substance there, and with difficulty removed it. It was, she testified, "a piece of glass almost an inch long with jagged ends, and it looked like it had been part of a tube." Her husband said it was part of a glass tube, and the end tapered like a pen point. About a month later, plaintiff testified, a piece of glass was discharged at the time of menstruation, and three or four more times during the year following the operation pieces of glass came away. So far as the published record shows, the plaintiff introduced no evidence to prove the presence in the operating room of a glass drainage tube at any time during the operation or to show the presence of glass on the gauze to be used for packing. The defendant, however, while denying the plaintiff's allegations of carelessness and negligence, said that in irrigating the site of the operation he used a glass nozzle attached to the end of a rubber tube. He was certain, however, that no part of the nozzle had been broken off. He denied that there was any glass in the gauze which he had used. He was unable to account for the presence of glass in the plaintiff's body. Catgut comes in little glass tubes, he testified, but the tubes are broken by nurses before the operation is started. If an extra supply is needed in the course of an operation, a tube may be broken in the operating room, but it is not broken around or near where there is gauze for packing. It is broken at a different table, on the opposite side of the room. These tubes are broken between layers of towels or layers of gauze, and if gauze is used it is thrown into the waste basket. If there had been any glass on any of the gauze used for packing, any one using the gauze would have seen the glass and would not have used the gauze. A tube containing catgut was broken in the presence of the jury, and the plaintiff selected a piece of the broken tube, which, she testified, corresponded very closely to the piece of glass that she took from her body. The correctness of the defendant's procedure in the course of the operation, its conformity to standard good practice in the community where the operation was done, and the improbability of glass having been introduced into the uterus in the course of the operation and remaining there as long as was alleged in this case, were testified to by expert witnesses appearing on behalf of the defendant. Judgment was given in favor of the patient, however, and the defendant appealed to the Supreme Court of North Carolina.

No presumption of negligence, said the Supreme Court, arises from a physician's error of judgment in the diagnosis of a case or from his failure to cure, or to accomplish results as good as some one else might have accomplished, except "where there is manifest such obvious gross want of care and skill as to afford, of itself, an almost conclusive inference of negligence." *Slimak* v. *Foster*, 138 A. 153; *Donahoo* v. *Lovas*, 288 P. 698. In such cases, neither affirmative proof of negligence nor expert testimony as to the defendant's want of skill need be given on behalf of the plaintiff. The proved facts are accepted as a sufficient basis for a presumption of negligence, under the doctrine of res ipsa loquitur. The casualty itself and the circumstances surrounding it may furnish all the proof that the injured person is able to offer or that it is necessary to offer. Where the injury is received while the patient is unconscious, the doctrine of res ipsa loquitur is commonly held to apply, because under such circumstances the patient is unable to testify as to what happened, whereas the physician can do so. Herzog's Medical Jurisprudence, section 187, note, 162-163. In operations like the present one, the patient is unconscious, and if the doctrine of res ipsa loquitur did not apply, the patient would be without a remedy.

The defendant, however, contended that the application of the doctrine of res ipsa loquitur was not justified in the present case, because he had denied that the alleged injury to the patient had been caused by glass left in the operation wound. Before the doctrine became applicable in this case, he contended, the patient had to prove her alleged injury had been so caused. This contention, however, the Supreme Court rejected, quoting with approval from the charge given to the jury by the trial court:

> Where a thing which causes injury is shown to be under the management of the defendant, and the accident is such as in the ordinary course of things does not happen, if those who have control and management of it use the proper care, it furnishes or would be some evidence, in the absence of explanation of the defendant that the accident arose from want of care. The principle of res ipsa loquitur (which means the thing speaks for itself) in such cases carries the question of negligence to the jury, not, however, relieving the plaintiff of the burden of proof, and not raising any presumption in her favor, but simply entitles the jury in view of all the circumstances and conditions as shown by the plaintiff's evidence to infer negligence and say whether upon all the evidence the plaintiff has sustained her allegation.

Although the defendant and his witnesses contended that the injury alleged could not have occurred in the manner claimed by the plaintiff, the issue was a matter of fact to be determined by the jury. The evidence adduced was sufficient to be submitted to the jury, and the jury, not the court, are the triers of disputed facts.

The judgment in favor of the patient was affirmed.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 10-12. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

Idaho State Medical Association, Yellowstone National Park, August 6-8. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Maine Medical Association, Poland Spring, June 26-28. Dr. Philip W. Davis, 22 Arsenal Street, Portland, Secretary.

Montana, Medical Association of, Anaconda, July 12-13. Dr. E. G. Balsam, Box 88, Billings, Secretary.

National Tuberculosis Association, Toronto, Canada, June 26-30. Dr. Charles J. Hatfield, Seventh and Lombard streets, Philadelphia, Secretary.

Pacific Coast Oto-Ophthalmological Society, San Francisco, June 28-30. Dr. F. C. Cordes, Fitzhugh Building, San Francisco, Secretary.

Western Branch Society, American Urological Association, Vancouver, B. C., August 3-5. Dr. George W. Hartman, 999 Sutter Street, San Francisco, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Annals of Internal Medicine, Ann Arbor, Mich.

6: 1013-1124 (Feb.) 1933

Anatomy of Autonomic Nervous System, with Especial Reference to Innervation of Skeletal Muscles and Blood Vessels. S. W. Ranson, Chicago.—p. 1013.

Functional Organization of Involuntary Nervous System and Its Humoral Mediators. W. B. Cannon, Boston.—p. 1022.

Autonomic Control of Heart, Lungs and Bronchi. H. L. Alexander, St. Louis.—p. 1033.

*Results of Sympathectomy in Treatment of Peripheral Vascular Diseases, Hirschsprung's Disease and Cord Bladder. A. W. Adson, Rochester, Minn.—p. 1044.

Pathologic Differentiations in Bright's Disease. Jean Oliver, Brooklyn. —p. 1069.

Science and Practice in Bright's Disease. T. Addis, San Francisco.—p. 1077.

*Etiology and Pathogenesis of Hepatic Cirrhosis. T. L. Althausen, San Francisco.—p. 1080.

Aleukemic Myelosis with Osteosclerosis. D. J. Stephens and J. F. Bredeck, St. Louis.—p. 1087.

*Some Unusual Cardiac Complications of Hyperthyroidism: Report of Four Cases. C. Smith and H. C. Sauls, Atlanta, Ga.—p. 1097.

Pneumosilicosis and Amyloidosis: Report of Case of Asymptomatic Pulmonary Silicosis and Amyloid Kidney; Death from Uremia. J. B. Carey, Minneapolis.—p. 1106.

Results of Sympathectomy.—Adson feels confident that sympathectomy, in its various forms, will continue as a means of treatment in conditions of dysfunction of blood vessels, smooth muscle and glands. Progress in this field requires the cooperation of the anatomist, the physiologist and the clinician. It would be unwise for the surgeon to attempt operations on the sympathetic system unless he is thoroughly familiar with the anatomy. Most satisfactory results have been accomplished by sympathetic ganglionectomy and trunk resection in the treatment of peripheral vascular diseases, such as Raynaud's disease, thrombo-angiitis obliterans with vasomotor spasm of the collateral arteries, acral scleroderma developing subsequent to Raynaud's disease, and periarticular arthritis, in the hands and feet, associated with vasospastic phenomena of cold, clammy, pale and cyanotic extremities. The sectioning of sympathetic fibers to the internal sphincter muscles of the rectum and bladder, and of sympathetic fibers carrying inhibitory impulses to the large intestine and to the detrusor muscles of the bladder, has materially aided the expulsive forces of both the rectum and bladder, thus offering assistance in the treatment of congenital megacolon and cord bladder.

Hepatic Cirrhosis.—Althausen states that the earliest lesions leading to experimental cirrhosis of the liver are always found in the hepatic parenchyma. Any toxic agent causing necrosis of the parenchymatous cells of the liver will on repeated administration produce cirrhosis of this organ. He discusses alcohol and inert colloids as etiologic factors in cirrhosis. Following necrosis of hepatic tissue, regeneration of parenchyma and proliferation of the framework of the liver take place. The relative prominence of these two processes, as well as the dose of the toxin and its chemical nature, determine the clinical and pathologic end-picture of cirrhosis. The unitary conception of the genesis of the various types of cirrhosis of the liver furthers earlier recognition and treatment of this disease by focusing attention on the toxin involved.

Cardiac Complications of Hyperthyroidism.—Smith and Sauls present the histories of four patients with hyperthyroidism and unusual cardiac complications. It is necessary to suspect hyperthyroidism in some patients with heart disease. To suspect thyrotoxicosis in the absence of physical signs is essential in making a diagnosis in these obscure cases. Attempts should be made to elicit a history of nervousness, palpitation of the heart, loss of weight, diarrhea of inexplicable origin, excessive sweating, premature gray hair, preference of cold to hot weather, and familial occurrence of hyperthyroidism. On close questioning, a history of hyperthyroidism with a spontaneous remission many years before may be obtained. In treating these patients, iodine should almost never be given unless plans for operation have been made. Preoperative preparation should consist of complete rest in bed, forced feedings and large doses of sedatives. After from ten to fourteen days of iodine administration the patient's general condition will usually be much improved and the metabolic rate consequently greatly reduced. Operation can then be performed without difficulty.

Journal of General Physiology, Baltimore

16: 559-732 (March 20) 1933

Ultrafiltration. II. "Bound" Water (Hydration) of Biologic Colloids. D. M. Greenberg and M. M. Greenberg, Berkeley, Calif.—p. 559.

Similarity of Kinetics of Invertase Action in Vivo and in Vitro: III. J. M. Nelson and B. G. Wilkes, New York.—p. 571.

Experimental Comparison of Different Criteria of Death in Yeast. O. Rahn and Margaret Noble Barnes, Ithaca, N. Y.—p. 579.

Electrokinetic Phenomena: XI. Action of Uni-Univalent Electrolytes on Electric Mobility of Proteins. H. A. Abramson, New York.—p. 593.

Osmotic Relationships in the Hen's Egg. J. M. Johlin, Nashville, Tenn. —p. 605.

Crystalline Pepsin: V. Isolation of Crystalline Pepsin from Bovine Gastric Juice. J. H. Northrop, Princeton, N. J.—p. 615.

Process of Phagocytosis: Agreement Between Direct Observation and Deductions from Theory. Emily B. H. Mudd and S. Mudd, Philadelphia.—p. 625.

Characteristics of Ultrafiltrates of Plasma. R. C. Ingraham, C. Lombard and M. B. Visscher, Chicago.—p. 637.

Effect of Cyanide and of Variation in Alkalinity on Oxidation-Reduction Potential of Hemoglobin-Methemoglobin System. R. D. Barnard, Chicago.—p. 657.

Stimulation by Mineral Acids, Hydrochloric, Sulphuric and Nitric, in Sunfish Eupomotis. W. H. Cole and J. B. Allison, New Brunswick, N. J.—p. 677.

Specific Nerve Impulses from Gustatory and Tactile Receptors in Catfish. H. Hoagland, Worcester, Mass.—p. 685.

Electrical Responses from Lateral-Line Nerves of Catfish: I. H. Hoagland, Worcester, Mass.—p. 695.

Quantitative Analysis of Responses from Lateral-Line Nerves of Fishes: II. H. Hoagland, Worcester, Mass.—p. 715.

Military Surgeon, Washington, D. C.

72: 93-188 (Feb.) 1933

Use of Anticolibacillary Serum in Surgery. Hyacinthe Vincent.—p. 93.

Cholecystectomy and Its Physiopathology. A. Gonzalez-Cosio.—p. 104.

Medical Activities of Panama Canal. W. P. Chamberlain.—p. 108.

Modification of Thomas or Keller Traction Splint. C. M. B. Gilman. —p. 125.

What a Dental Officer Ought to Know When Entering Service. F. M. Dimas-Arutti.—p. 127.

Diabetes: Simplified Management in Small Military Hospitals. H. C. Michie.—p. 130.

Carlisle Hallmark: Loyalty. H. H. Rutherford.—p. 141.

Radiology, St. Paul

20: 69-154 (Feb.) 1933

Method for Localization of Foreign Bodies in the Eye. R. Kegerreis, Chicago.—p. 69.

Roentgen Diagnosis of Lesions in the Small Intestine. H. W. Soper, St. Louis.—p. 76.

Roentgen Therapy in Arthritis: New Aspects and Technic. H. Langer, Pittsburgh.—p. 78.

Roentgen-Ray Exploration (Diagnosis) of Pelvic Viscera with Aid of Iodized Oil. J. J. Eisenberg, Milwaukee.—p. 86.

Experimental Clinical Research Work with Roentgen-Ray Voltages Above Five Hundred Thousand: Preliminary Statement. A. Soiland, Los Angeles.—p. 99.

Studies of Effect of Roentgen Rays on Healing of Wounds: II. Histologic Changes in Skin Wounds in Rats Following Postoperative Irradiation. E. A. Pohle and G. Ritchie, Madison, Wis.—p. 102.

*Diagnosis and Roentgenologic Evidence in Spondylolisthesis. H. W. Meyerding, Rochester, Minn.—p. 108.

Plastic Surgery of Hip. A. B. Gill, Philadelphia.—p. 120.

Advantages and Disadvantages of Small Chamber Measuring Instruments: Analysis of Back-Scattered Radiation. H. B. Hunt, Omaha. —p. 128.

*Prevention and Treatment in Cervical Uterine Cancer. F. I. Shroyer, Dayton, Ohio.—p. 136.

Foreign Body Accidents in Children: Diagnosis and Treatment. L. H. Clerf, Philadelphia.—p. 142.

*Diagnosis of Uterine and Tubal Pathology Using Lipiodol. A. T. Harris, Sheldon, Iowa.—p. 146.

Diagnosis in Spondylolisthesis.—Meyerding states that, of the 207 patients with spondylolisthesis examined at the Mayo Clinic, 64 per cent were hard-working people. Their average age was 40 years, and 71 per cent were men. The principal

complaint was backache of almost nine years' duration. Although many patients had consulted physicians, and roentgenograms had been made, less than 10 per cent had been given a diagnosis. Symptoms are relieved by rest, but hard work, especially stooping and lifting, aggravate them. The patient may appear well and be gaining in weight. The anteroposterior roentgenogram may appear to be negative. Malingering may be suspected when the subluxation is slight and discernible only in lateral roentgenograms. Clinical signs vary with the degree of deformity. A typical example discloses depression or lordosis of the lumbar spinous processes with prominence of the fifth lumbar spinous process and the sacrum. This region was involved in 86 per cent of the cases. With increased subluxation, shortened torso and broadened pelvis occur; motion of the spinal column is principally limited on forward bending. Although trauma is significant as an etiologic factor, it may be difficult to prove. The history and clinical data, when substantiated by evidence of fracture in the roentgenogram, are conclusive. Symptomless spondylolisthesis occurred in 9 per cent of the cases. A hard, bony mass is sometimes palpable low in the abdomen. Rectal examination, proctoscopic or manual, may disclose a narrowed anteroposterior diameter of the pelvis. In about 2 per cent of the cases the spondylolisthesis was of the reverse type. Congenital anomalies were present in a high percentage of cases. Spondylolisthesis is seldom recognized in general practice. It is obviously associated with chronic backache. Roentgenologists may disclose its presence in spite of negative clinical data. One may look forward to an increasing incidence of this deformity in cases of chronic backache and injury to the spinal column as a result of the more common use of lateral roentgenograms of the lumbosacral area.

Prevention and Treatment in Uterine Cancer.—Shroyer believes that the majority of women complaining of nervous disorders, general tiredness, backache, mental irritation, leukorrheal discharge, constipation and palpitation of the heart are affected by toxic poisons, generally from the pelvic organs. These patients usually have a congested liver and will feel better at once if given mercurous chloride followed by magnesium sulphate next morning. All cancer patients present these complaints and frequently admit that they have been getting worse each year. The author has seen patients who have been treated for heart disease for several months. When they are examined (and thyroid disease is absent), often the real underlying cause has proved to be a lacerated cervix with accompanying gallstones. Why should not these patients develop cancer with such bombardment of bacterial and chemical toxins? The intestinal tract should be cleaned up with proper foods, and all points of infection and irritation should be removed. One should not wait and watch a condition to see what the outcome will be but should institute the most scientific treatment available. By doing so, one will be able to prevent many an individual from becoming a victim of cancer. Total or subtotal hysterectomy should never be performed for menorrhagia: radium will cure these cases; it not only destroys cancer cells but kills the infection present. If the hemorrhage is not corrected, operation is in order after several irradiations, and few patients will die following the operation. The author irradiates all myomas and fibroids except those that are pedunculated and calcified, and, if necessary, he operates two or three months later.

Diagnosis of Uterine and Tubal Pathologic Disorders.—Harris points out that, in the more obscure uterine and tubal pathologic changes, the most successful means of establishing a diagnosis, without resorting to laparotomy with its dangers and discomforts, is through the use of iodized oil to assist in the roentgenographic visualization of the organs of reproduction. Iodized poppy-seed oil is ideal in that there are no contraindications—no open blood channels such as are seen in malignant conditions and menorrhagia. He concludes that uterosalpingography is an unrivaled means of establishing a diagnosis of uterine and tubal abnormalities that cannot be detected with any degree of certainty except by laparotomy and is an accurate means of diagnosing the cause, or causes, of sterility in women otherwise normal and having normal husbands. Uterosalpingography is a most useful aid in establishing with certainty, with little or no risk to either the mother or the embryo, the presence of the earliest stages of pregnancy.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal Obst. and Gynec. of Brit. Empire, Manchester

40: 1-208 (Feb.) 1933

*Puerperal General Peritonitis. L. N. Pyrah and C. Oldfield.—p. 3.
Effect of Reproduction on Insanity. A. L. Robinson.—p. 39.
Simultaneous Intra-Uterine and Extra-Uterine Pregnancy: Two Cases: Review of Recorded Cases. A. A. Gemmell and the late H. L. Murray.—p. 67.
Birth Control Studies: III. Experimental Observations on Gräfenberg Ring Contraceptive Methods. H. M. Carleton and H. J. Phelps.—p. 81.
Teaching of Practical Obstetrics. D. Dougal.—p. 99.

Puerperal General Peritonitis.—Pyrah and Oldfield state that puerperal general peritonitis is present in about one half of all patients who die from puerperal fever. In most of these cases it is the immediate cause of death. Puerperal peritonitis is caused in the majority of cases by the streptococcus and has been assumed to be almost uniformly fatal. The most severe cases arise within the first four days after delivery and follow the rapid invasion of the peritoneal cavity by organisms entering through the lymph node vessels in the wall of the uterus. There is often a blood infection and rarely any localized pelvic suppuration. General peritonitis occurring four days or later after delivery is less severe, and in these patients localized pelvic suppuration is most commonly found in the wall of the uterus and less frequently in the ovary and in the broad ligament. The peritoneal infection may arise either from the uterus itself or more often from the localized abscess. The authors outline other causes of peritonitis occurring in the puerperium and describe the symptoms and signs of acute puerperal general peritonitis. They urge that operation for cases in which puerperal peritonitis is reasonably suspected should be undertaken much more often than it has been in the past. The fully developed clinical picture must never be awaited if the present high mortality is to be reduced. Although diagnosis is always difficult, they think that most cases may be recognized before the peritoneum is widely affected. Cases of puerperal sepsis in which a palpable mass is present must be watched for signs of involvement of the general peritoneal cavity, and, if such an involvement is diagnosed, immediate operation must be performed. An abscess of the wall of the uterus is especially liable to be associated with general peritonitis. The authors report a series of thirty-six cases of puerperal general peritonitis, with recovery in eleven.

Journal of Tropical Medicine and Hygiene, London

36: 49-64 (Feb. 15) 1933

Cardiac Complications of Ancylostoma Infection, with Especial Reference to a Presystolic Murmur Occurring in These Cases. H. O. Gunewardene.—p. 49.
*Note on Some Experiments on Action in Vitro of Normal Human Serum on Trypanosoma Brucei and T. Rhodesiense. J. F. Corson.—p. 53.

Experiments with Trypanosoma Brucei and T. Rhodesiense.—Corson records experiments made with two strains of Trypanosoma brucei and one strain of T. rhodesiense. The object of the experiments was to see if guinea-pig serum had any trypanocidal action on T. brucei Shinyanga, if the serum of a rat that had previously resisted infection with T. brucei Natal was trypanocidal to it, and if the strain of T. rhodesiense, freshly isolated from man, was resistant to human serum. It was found that the guinea-pig serum had no apparent trypanocidal action on T. brucei Shinyanga and that the serum of the resistant rat also had no trypanocidal action on T. brucei Natal. Both strains of T. brucei were susceptible to normal human serum, as was also the strain of T. rhodesiense. The resistance of guinea-pigs and of some white rats to the two strains of T. brucei does not seem to be connected with any trypanocidal action of their serum. The apparent susceptibility of the strain of T. rhodesiense to the serums of two native men, belonging to an area free from trypanosomiasis, does not lead one to think that inoculation of the donors of the serum with the blood of the rat would fail to infect them. The little evidence that exists at present on this point is rather against that supposition, but experiments on man would seem to be necessary to decide the question.

Annales de Médecine, Paris

33: 337-432 (April) 1933

*Hemorrhagic Pleurisy with Eosinophils in Primary Cancer of Lung: Micropleurisy with Eosinophils. L. Bernard and J. Marie.—p. 337.
Parathyreoprivous Tetany. M. Labbé.—p. 349.
Value of Treatments of Exophthalmic Goiter. J. Belot and Ledine.—p. 363.
New Research on Typhoid Immunity: Typhoid Endotoxin and Antiendotoxic Immunity. J. Reilly, E. Rivalier, C. Launay and V. Stéfanesco.—p. 388.

Hemorrhagic Pleurisy with Eosinophils in Cancer of Lung.—Bernard and Marie affirm the existence, contrary to classic opinion, of hemorrhagic pleurisies with eosinophils during the course of primary cancer of the lungs. These neoplastic pleurisies with eosinophils present two varieties. In one type the pleurisy is abundant and the eosinophilia is distinct and is the only distinguishing feature characterizing this type of effusion. The other type is characterized by its insidiousness, the slight amount of the effusion, its enormous and transitory eosinophilia, its short duration and its aseptic nature. This micropleurisy with eosinophils, whether it is hemorrhagic or citrine, appears to translate a special process of aseptic reaction to the pleural serosa which may be realized by different causes, such as pulmonary neoplasia, acute pulmonary congestion, endocarditis, or pulmonary amebiasis.

Gynécologie et Obstétrique, Paris

27: 289-384 (April) 1933

Syndrome of Grave Hydropigenous Albuminuria During Gestation. J. Voron and H. Pigeaud.—p. 289.
Genital and Extragenital Endometrioid Formations in Women. H. Portes and P. Isidor.—p. 309.
*Unexplained Sterilities: Study of Ascent of Spermatozoa in Lower Genital Passages of Women. J. Seguy and J. Vimeux.—p. 346.

Ascent of Spermatozoa in Genital Passages of Women.—Seguy and Vimeux found that the acidity which normally exists in the vagina stimulates the spermatozoa and increases their oscillations, but it also shortens their existence so that, contrary to accepted opinion, those which do not leave the vagina rapidly are killed. The cervical content is always alkaline and strongly attracts the spermatozoa, which cannot penetrate the orifice of the cervix unless it contains an abundant quantity of a glairy, fluid, transparent secretion. The glairy secretion that makes the cervix permeable is physiologic and temporary and is probably linked to the phenomenon of ovulation. It may appear at different periods of the menstrual cycle and its duration is variable. In most women this permeable glairy secretion is present only once during the menstrual cycle; it appears about the tenth day after the beginning of the previous menstrual period and lasts from four to five days. In some women the cervix is never physiologically permeable to spermatozoa because there is no secretion, because it is too scanty or because it is purulent. These facts make it possible to understand certain cases of unexplained sterility.

Prensa Médica Argentina, Buenos Aires

20: 679-714 (March 29) 1933. Partial Index

New Apparatus for Treating Fractures of Lower Extremities by Continuous Extension of Fractured Leg Utilizing Well Leg for Counteraction. R. Sole.—p. 679.
Rôle of Pulmonary Hyperventilation in Parathyreoprivous Tetany. G. Martino.—p. 685.
*Streptococcic Septicemia with Port of Entry in Genital Organs Causing Encephalitic Syndrome: Case. E. A. Beretervide and J. J. Reboiras.—p. 686.

Streptococcic Septicemia with Port of Entry in Genital Organs.—Beretervide and Reboiras state that streptococcic septicemia has a sudden onset with chills, high fever, intense headache, nausea and vomiting associated with a nervous syndrome, which later is complicated with cardiac disturbances. The blood presents a typical picture with leukopenia, granulocytopenia and bacteremia. Endocarditis is the most frequent and the gravest complication. Streptococcic septicemia varies with the character of the infection. Benign forms are rare and may be cured. The differential diagnosis is made with typhoid, acute tuberculosis, undulant fever, malaria and other forms of septicemia. Fixation abscess and the treatment of local foci of infection are the most promising therapeutic methods. Transfusion and immunotransfusion may give satisfactory results, but serums and vaccines do not. The authors' patient, aged 12, presented a syndrome of encephalitis with mental confusion and delirium. An intense suppurative vulvovaginitis of infectious origin and of long duration proved to be the source of the streptococcic septicemia. The infection that originated the vulvovaginitis was typhoid, from which the child had suffered some years before the actual disease. Eight days of treatment of the vulvovaginitis with methenamine intravenously and orally produced a great improvement in the patient's general condition. The mental confusion, tachycardia, hypertonia and fever still persisted, although slightly modified. No nervous symptoms were observed after two months of treatment. The cardiac complications, represented by insufficiency of the mitral valve, seemed to be a permanent sequel. Multiple small subcutaneous abscesses appeared in different parts of the patient's body.

20: 715-794 (April 5) 1933. Partial Index

Cyanosis of "Black Cardiacs" with Ayerza's Disease. M. R. Castex and E. L. Capdebourat.—p. 715.
*Gastric Aleukemic Lymphomatosis in Children: Case. R. Cibils Aguirre, D. Brachetto Brian and J. J. Murtagh.—p. 734.
Linitis Plastica of Scirrhous Cancer Type: Case. A. V. Di Ció and A. Maggi.—p. 753.
*Treatment of Constipation by Resection of Lumbar Sympathetic. J. Diez.—p. 767.

Gastric Aleukemic Lymphomatosis in Children.—Cibils Aguirre and his collaborators state that the development of gastric tumors during childhood is rare. They report a case of aleukemic lymphomatosis localized in the stomach of a child, aged 12, in whom the diagnosis was made during the life of the patient. At first a clinical diagnosis of either Pott's disease or neuropathy was erroneously made. A diffuse gastric tumor, the nature of which could not be determined, although its roentgen characteristics were similar to those given by gastric cancerous tumors, was discovered by roentgen examination. At operation a diffuse gastric tumor with great lymphatic infiltration was found. The tissues of the stomach were friable, making impossible any attempt at performing a gastrectomy or gastroenterostomy. An ileostomy was performed. The authors' case is the first in the literature in which an extensive roentgen study of the disease has been reported. There are no typical roentgen characteristics of lymphoblastoma. Nevertheless, the authors say that some writers attach importance to the persistence of peristalsis to indicate the presence of gastric lymphoblastoma, as differentiated from carcinoma, in which peristalsis disappears; that a differential diagnosis between gastric lymphoblastoma and gastric polyposis may be made by pneumogastroroentgenography, and that the roentgen aspect of lymphoblastoma shows a moderate infiltration of the tissues if compared with the more destructive character of lymphosarcoma. The differentiation of the nature of gastric tumors by roentgen examination is important because on this differentiation depends the nature of the treatment (surgical or roentgen) to be used. Roentgen irradiation has a favorable action on gastric lymphoblastoma. The authors advise making a revisal of the clinical conception and terminology of gastric aleukemic lymphomatosis to establish a more proper and clearer classification in relation to the anatomic and hematologic aspects of the disease.

Treatment of Constipation by Resection of Lumbar Symphathetic.—Diez states that surgery of the sympathetic nervous system has great advantages over other surgical methods used heretofore for the treatment of constipation. The technic of the operation is simple. The author follows the extraperitoneal route of approach. The superior and inferior sections of the sympathetic lumbar nerve are made at the level of the first and fourth lumbar vertebrae, respectively. Whether the sympathetic lumbar nerve is sectioned at the right or at the left side, the results of sympathectomy are the same, since the sympathetic innervation of each segment of the intestine is bilateral. The aim of lumbar sympathectomy is to cause the surgical destruction of the sympathetic nervous fibers, which cause the functional inhibition of Auerbach's plexus, and to leave intact the parasympathetic nervous fibers, which stimulate the functions of the same plexus. The complete predominance of parasympathetic over sympathetic influences in Auerbach's plexus produces increased peristalsis of the distal segment of the colon, increased tonus of the intestinal musculature and diminished control of the internal sphincter of the anus, all of which result in the correction of constipation. The functions of the colon are not modified immediately after the operation. Spontaneous evacuation appears from six to eight days after

the operation, and the daily evacuation is normal from twenty to thirty days after the operation. The size and length of the colon decrease slowly but continuously, so that three months after the operation roentgen examination shows the favorable modifications which the organ has undergone as a result of the operation. Copremia and the painful symptoms of the right segment of the colon disappear with the disappearance of constipation and the patient shows marked improvement. If no satisfactory results are obtained from unilateral lumbar sympathectomy, it is advisable to repeat the operation on the opposite side, since it is simple and does not endanger the patient in any way. The shock caused by the operation is not greater than that caused by any other surgical intervention, such as appendectomy. The operation is performed in about twenty minutes. While other methods previously reported for the correction of constipation aimed at correcting only the anatomic abnormality coexistent with the pathologic condition by suppressing the functions of the pathologic organ or by removing the organ, sympathectomy aims directly at correcting the disequilibrium that exists between the sympathetic and parasympathetic influences governing the functions of the organs, without altering or removing the pathologic viscera.

Archiv für Gynäkologie, Berlin

153: 181-358 (April 21) 1933

*Isolation and Demonstration of Hormone of Parathyroids in Blood of Pregnant Women. F. Hoffmann.—p. 181.
Resorption and Assimilation of Food Protein in Gestating Organism. O. Bokelmann and W. Scheringer.—p. 201.
Roentgenologic Differential Diagnosis Between Luxation of Hip Joint and Traumatic Epiphyseolysis in New-Born Infants. H. O. Kleine. —p. 213.
Decidual Formation and Embryonal Traces of Cervical Glands in Vagina with Clinical Aspects of Vaginal Polyposis. H. Zacherl.—p. 224.
Occurrence of Male Sex Hormone in Urine of the New-Born and in Placenta. H. Goecke, P. Wirz and H. Daners.—p. 233.
Demonstration of Thyroid Hormone in Blood of Menstruating and of Pregnant Women. C. Müller.—p. 244.
Irradiation of Ovaries and Impairment of Offspring as Histologic Problem. P. Caffier.—p. 252.
Cured Arrhenoblastoma with Subsequent Pregnancy: Ovarian Tumors with Hormone Action. E. Sedlaczek.—p. 276.
*Observations in Therapy of Irregular Functions of Ovary and of Anterior Lobe of Hypophysis. N. Louros.—p. 296.
Antefixation of Retroflexed Uterus. N. Kakuschkin.—p. 305.
Polypoid Marginal Cotyledons. H. Bachmann.—p. 311.
Rare Form of Granulosa Cell Tumor of Ovary, So-Called Folliculome Lipidique (Lecène). W. P. Plate.—p. 318.
Solid, Large Round Cell Carcinoma, So-Called Disgerminoma of Ovary. Z. von Szathmáry.—p. 333.
Changes in Vermiform Appendix in Case of Peritoneal Pseudomyxoma. G. von Nagy.—p. 350.

Hormone of Parathyroids in Blood of Pregnant Women.—The starting point of Hoffmann's investigations was a number of clinical and experimental observations indicating increased functional activity of the parathyroids during pregnancy. He attempted to solve this problem by the direct demonstration of an increased content of parathyroid hormone in the blood of pregnant women. Since thus far the parathyroid hormone had been isolated only from the parathyroids, it was necessary to devise a new method for its isolation from the blood. The principle of the method is the separation of the active substance from the serum protein bodies by boiling with diluted solutions of hydrochloric acid and by subsequent filtration. Further refinement of the hormone is obtained by treatment with dilute solution of acetone and by precipitation with dilute solutions of trichloracetic acid. The dry residue of this precipitate is further purified and, following neutralization, is dissolved in physiologic solution of sodium chloride for testing. A quantity of 100 cc. of plasma yielded generally from 20 to 30 mg. of the hormone as dry residue. The action of the preparations obtained from the blood of pregnant women was tested by determining its influence on the calcium content of the blood of dogs. The amount obtained from 75 cc. of plasma withdrawn during the last stage of pregnancy resulted in a comparatively rapid increase in the calcium content of the blood. In comparing the calcium mobilizing substance of the blood of pregnant women with the parathyroid hormone, it was found that the two substances were identical not only in regard to their pharmacologic but also to their essential physical and chemical properties. In systematic tests on the parathyroid hormone content of the blood during pregnancy and during the puerperium, it was found that the hormone was present in sufficient quantities for detection between the third and fourth months, increased slightly up to the eighth and was greatly increased at the end of pregnancy. During the puerperium the hormonal content decreased rapidly.

Therapy of Irregularities of Ovarian and Hypophyseal Functions.—Louros says that so many factors are involved in the abnormal function of the ovaries and of the hypophysis that it is frequently difficult to determine the efficacy or the failure of the hormone therapy. Observations on 700 patients with abnormal ovarian activity convinced him that there are certain prerequisites for the success of the hormone treatment. He found hormone therapy entirely valueless in the presence of abnormal anatomic conditions of the ovaries and of the uterus. Ovarian cysts, tumors of the uterine adnexa, chronic inflammations, adhesions and anomalies in the position of the uterus must first be corrected by surgical intervention before hormone therapy can be commenced. A persisting corpus luteum was found to be the cause of the abnormal ovarian function in some cases, and the author considers it noteworthy that a tuberculous process existed in the three patients in whom this was the case. He discusses the indications for hormone therapy. In irregularities of menstruation in which the rhythm and the cyclic character are still preserved but in which the duration and the quantity of the flow are subnormal, the ovarian hormone should be administered, provided the local anatomic conditions are normal or have been surgically corrected. The symptoms of abolished function, such as dizziness, headaches, hot flashes, palpitation of the heart, articular pains, cutaneous paresthesias, perspiration, itching and psychic disorders, which may occur with or without the aforementioned menstrual disturbances, yield to ovarian hormone therapy as do also dyspareunia or sterility, provided there is no irregularity in the menstrual period. In menorrhagia, a local cause should always be searched for, the operative removal of which usually reestablishes the normal period, so that hormone therapy is not required in these cases. If the menstrual period is so irregular that the cyclic rhythm is no longer detectable, hypophyseal and ovarian preparations should be given, after local disturbances have been ruled out. A pulmonary tuberculosis is a contraindication to any therapy that aims to reestablish the ovarian function, for in these cases the cessation of the menstrual flow is a compensatory action on the part of the organism. The author states that the oral administration of ovarian preparations is generally of little avail and he recommends that they be given intravenously. Hypophyseal hormone is administered intramuscularly. Treatment with calcium preparations proved a valuable adjuvant to hormone therapy, probably because of its action on the sympathetic.

Dermatologische Wochenschrift, Leipzig

96: 461-504 (April 8) 1933

Neurotic and Hysteric Dermatoses. J. Werther.—p. 461.
*Short Wave Therapy in Gonorrheal Arthritis. H. Graf.—p. 470.
Forgotten Parasite (Trichosoma Recurvum) as Cause of Creeping Disease. B. Solger.—p. 476.
*Case of Probable Second Syphilis Infection in Spite of Continued Bismuth Therapy. S. Zetterholm.—p. 477.

Short Wave Therapy in Gonorrheal Arthritis.—Graf points out that the short wave method introduced into medicine by Schliephake is acquiring a permanent place in the therapeutic armamentarium. It employs wavelengths of from 20 to 3 meters in the air condenser field, and some authorities refer to these waves as the "ultrashort." The author employed short waves of a length of from 19 to 14 meters, according to Schliephake's method, in nine cases of gonorrheal arthritis, with rapid alleviation of the pains, which in most cases disappeared entirely. The other manifestations of inflammation likewise decreased. The author recommends short wave therapy as an effective therapy of gonorrheal articular inflammations.

Superinfection with Syphilis During Bismuth Therapy.—Zetterholm relates the clinical history of a man, aged 48, in whom, following renewed exposure to syphilis, signs of a reinfection appeared in spite of the fact that he still received bismuth compounds. This observation induced the author to study the literature about reinfections. Among 630 cases he found only six in which reinfection took place during the treatment of the first infection. The antisyphilitic remedies used in these cases of unsuccessful prophylaxis were mercury preparations and arsphenamine. The author considers the reported case of interest in the discussion of the prophylactic value of bismuth and he also mentions one publication which reports that five prostitutes became infected in spite of prophylactic bismuth therapy.

Deutsche Zeitschrift für Nervenheilkunde, Berlin

130: 185-312 (March 29) 1933

Genesis of Cerebrospinal Fluid and Permeability. V. Kafka.—p. 197.
*Atypical Forms of Paralysis. H. Saethre.—p. 217.
Critical Remarks on Determination of Chronaxia in Human Subjects. J. D. Achelis.—p. 227.
*Traumatic Paralyses Without Characteristic Trauma and Their Estimation. A. Gallinek and O. Hennig.—p. 248.
Cortical Production of Hertwig-Magendie Phenomenon. H. Korbsch. —p. 262.
Causes and Significance of Cerebral Pressure in Cerebral Tumor. O. Pedersen.—p. 270.
*Clinical Aspects of Extrapyramidal Attacks: Complications Following Antirabic Vaccinations. R. Schindelmann.—p. 291.
Supplemental Report to Article on Some Unusual Cases of Multiple Sclerosis. O. Klieneberger.—p. 299.
Casuistic Contribution to Symptomatology of Purulent Meningitis. H. Glatzel.—p. 301.

Atypical Forms of Dementia Paralytica.—Saethre points out that a negative Wassermann reaction in patients with untreated dementia paralytica is rare. Among 135 such patients, he observed four in whom the Wassermann reaction was negative in both the blood and the cerebrospinal fluid, three in whom the cerebrospinal fluid gave a negative reaction while the blood was positive, and one in whom the blood gave a negative and the cerebrospinal fluid a positive reaction. In all untreated Wassermann negative cases, the cerebrospinal fluid showed all the other symptoms that are typical for dementia paralytica, including the colloidal gold and mastic reactions. The author discusses particularly the four cases in which the Wassermann reaction was negative in both the blood and the cerebrospinal fluid. In one of these patients the characteristic symptoms of paralysis had existed for a year. The anamnesis revealed that a cerebrospinal fluid test had been done in another clinic nine months previously and had been found positive. Since the patient had received neither malaria therapy nor any other specific treatment, the change in reaction had developed spontaneously. In a second patient of this group, the Wassermann reaction of the serum had been positive a year before. The third patient was admitted to the clinic with new symptoms of dementia paralytica, with a negative Wassermann reaction in both the blood and the cerebrospinal fluid but with otherwise typical paralysis symptoms. In the fourth patient, the Wassermann reaction had been negative in four tests performed in the course of six months. All other observations on the cerebrospinal fluid were indicative of a typical dementia paralytica. Because the anamnesis revealed no syphilitic infection, because the pupillary reaction was normal and because the Wassermann reaction was constantly negative, the case was not diagnosed as dementia paralytica, but an encephalitis or a polysclerotic dementia was assumed and the patient was sent to a hospital for mental diseases. Here the dementia, ataxia and paralysis of the lower extremities increased rapidly. The patient died from pneumonia four years after the beginning of the dementia. The postmortem examination revealed changes indicative of dementia paralytica. The author relates a peculiar case of paroxysmatic megalomania ("psychic jacksonian attacks") in a patient with tabes who had undergone malaria therapy.

Traumatic Paralyses.—Gallinek and Hennig discuss types of paralysis that constitute a unit on the basis of their etiology and symptomatology and refer to paralyses in the region of the plexus brachialis and of the plexus sacralis, which usually develop suddenly during exertion. Frequently they are preceded by a hasty movement and develop only while the body is burdened; that is, while carrying, lifting, throwing or catching a heavy burden. The trauma consists in an injury to the roots of the plexus by an unsuitable movement or by continuous vibration and simultaneous exertion, as is the case in the use of tools operating with compressed air and repeatedly pressed against the shoulder. The prognosis of the described types of paralysis is unfavorable.

Extrapyramidal Attacks Following Antirabic Vaccinations.—Schindelmann's case was that of a boy, aged 8, who had previously suffered from attacks (epilepsy). Two weeks after completion of antirabic vaccination there developed in addition to involuntary myoclonic movements of the facial and cervical muscles a peculiar disturbance of the walking function. A normally begun movement was arrested suddenly, and this disturbance was accompanied by a disordered static function (falling of the patient). Simultaneously with the somatic disturbances, changes appeared also in the character and intellect of the patient. The disturbances observed in this case differ from those occurring in chronic encephalitis only in that they were not continuous but intermittent. Complications in the form of involvement of the central nervous system are comparatively rare in antirabic vaccination. The Leningrad institute reports only five cases in 40,000 vaccinations. Some authors consider the complications as mild cases of rabies, while others ascribe them to a virus fixe. The author is inclined to believe that the condition of the nervous system has a certain influence on the development of the antirabic complications, for the patient observed by him had previously been subject to attacks that probably produced a predisposition for epilepsy.

Medizinische Klinik, Berlin

29: 519-560 (April 14) 1933

*Diagnosis of Nephrolithiasis. R. Schmidt.—p. 519.
Hormone and Vitamin Actions and Their Interrelations. E. Abderhalden.—p. 523.
Decrease in Syphilis and Change in Its Character. W. Kolle and K. Laubenheimer.—p. 525.
Microscopic Diagnosis from Duodenal or Duodenobiliary Sediments. T. Brugsch.—p. 527.
Winding Course of Arteries. J. Pal.—p. 530.
Diagnosis of Intermittent Gastric Volvulus. W. Stepp and F. Kuhlmann.—p. 531.
Is There a Possibility of Detecting Septic Foci During Life? K. Bingold.—p. 532.
*Functional Examination of Lung. O. Klein and W. Nonnenbruch. —p. 536.
*Abdominal Wall Expulsion Reflex of Urinary Bladder: Formerly Unknown Reflex of Therapeutic Value. H. Schlesinger.—p. 538.
"Acquired" Hemolytic Icterus. J. Meinertz.—p. 539.
Modification of Physical and Chemical Heat Regulation by Cutaneous Application of Fat. O. Bruns.—p. 541.

Diagnosis of Nephrolithiasis.—Schmidt emphasizes that the general practitioner should be able to diagnose concrement formation in the urinary passages from the symptoms without roentgenologic examination and without probing of the ureters. He thinks that the patient should be subjected to a specialized roentgenologic and urologic examination only after the diagnosis has been made or after there is considerable evidence for it. The author discusses some of the pathologic factors of nephrolithiasis; namely, the pathogenesis, the types of persons in whom it occurs most frequently and the disorders with which it often concurs. He describes the spontaneous pains, those elicitable by pressure, their irradiation character, time of occurrence and course, and the factors that elicit them. As accompanying manifestations he mentions disturbances in the evacuation of the urine, nausea, chills, pain and eventually swelling of the testes, symptoms in the homolateral leg, such as cramps or weakness in the muscles of the calf, inflation of the abdomen, tension in the abdominal walls, and fever. Discussing the signs of nephrolithiasis detectable in the urine, the author mentions the precipitation of crystalline sediments and the turbidity of the urine, which, although not immediately connected with nephrolithiasis, nevertheless frequently concur with it, and the occurrence of blood in the urine and oliguria. He advises palpatory examination of the kidney, auscultatory examination of the lumbar and flank regions, rectal and vaginal examination, and examination of the abdominal reflexes.

Functional Test of Lung.—Klein and Nonnenbruch feel the lack of methods that permit a determination of the result of the pulmonary action; namely, the arterialization of the blood. In trying to devise methods for this purpose, they had the following aims: (1) to put the lung under conditions that represent a sort of tolerance test for the gas exchange in order to detect slight or latent disturbances, and (2) to detect objective values and to eliminate subjective factors. The first method described by the authors is a continuous control of the behavior of the oxygen saturation deficit in the arterial blood during and after short periods of nitrogen inhalation. The patient inhales nitrogen and by this a pure anoxemia without carbon dioxide stasis is produced. Blood is withdrawn from the radial artery before the nitrogen inhalation, at the end of seventy seconds of inhalation, and from twenty to thirty seconds after the inhalation. The three blood specimens are examined for oxygen deficit, oxygen capacity, oxygen content and percentage of saturation. In patients without pulmonary and circulatory disturbances, the anoxemia has disappeared again from twenty to thirty seconds after the nitrogen inhalation, and the oxygen deficit has decreased to its initial value. In patients with dis-

turbances of the lung, such as pulmonary stasis, emphysema, kyphoscoliosis and compression atelectasis, the anoxemia is nearly as pronounced at the third withdrawal of blood (from twenty to thirty seconds after inhalation) as at the end of the inhalation, and the oxygen deficit is likewise practically unchanged. The authors discuss another test in which histamine is employed. By arterial puncture, blood is withdrawn for analysis, and 1 cc. of histamine is injected subcutaneously. The second withdrawal of arterial blood takes place from twenty to twenty-five minutes after the histamine injection, and the third blood specimen is taken from forty to forty-five minutes after the injection. The deficit and capacity, the saturation and the content of oxygen are then determined in the blood specimens by means of gas analysis. If the pulmonary function is normal, the oxygen deficit either does not change under the influence of histamine or the change amounts to only from 0.5 to 0.7 volume per cent. Since the oxygen capacity is nearly always increased by the action of histamine, patients with normal pulmonary function never show a reduction in the percental oxygen saturation and in the absolute oxygen content, even if there is a slight increase in the oxygen deficit. On the contrary, an eventual slight increase in the oxygen deficit is always more than compensated by the increase in capacity so that, in case of normal pulmonary function, there is always an essential increase in the percental oxygen saturation and in the oxygen content. In patients with disordered pulmonary function (emphysema, pneumothorax, compression atelectasis, pulmonary stasis), histamine injection always effects an increase in the oxygen deficit of more than 1 volume per cent and, generally, from 2 to 5 volumes per cent, and there is always a decrease in the percental and, generally also, in the absolute oxygen content. The authors emphasize that, if the time is limited, the nitrogen method should be used, but in the case of sensitive patients the histamine method should be employed.

Expulsion Reflex of Urinary Bladder.—Schlesinger points out that the onset of senility, particularly in men, is frequently accompanied by disturbances of micturition. Even if the prostate is normal, the process of micturition may become impaired. The author found that by tapping or slightly rubbing the abdominal wall the onset of micturition can be accelerated. After apparent termination of the act, a repetition of the described procedure produces a resumption of micturition a second and a third time, even when considerable pressure has been ineffective. After the third evacuation the reflex is, as a rule, abolished and can be produced again only after an interval of from one to three minutes. The time between the mechanical stimulation of the abdominal wall and the elimination of the urine is, generally, from ten to twenty seconds, but occasionally it may be longer. At the beginning of micturition, the stimulation of the abdominal walls above the umbilicus seems to be most effective, whereas, if the bladder is only partly filled, stimulation of the abdominal walls below the umbilicus seems to have a better effect. Occasionally the apparently terminated micturition can be resumed by tapping or rubbing lateral portions of the abdominal walls. Observations on several patients extending over three years indicate the uniform course of the reflex. After describing the mechanism of the reflex, the author differentiates it from the visceromotor and from the viscerosensory reflexes and classifies it with a group of reflexes for which he suggests the term cutaneovisceral reflexes. He is convinced that the therapeutic use of this reflex can prevent for longer periods the accumulation of residual urine and thus make catheterization unnecessary

Münchener medizinische Wochenschrift, Munich

80: 555-594 (April 14) 1933. Partial Index

Bacterial Growth Inhibiting or Bactericidal Action of Orally Administered Iron. Schottmüller.—p. 555.
Syphilis in Women. G. Gellhorn.—p. 556.
Hydropigenous Ion Actions on Living Tissues by Means of Perfusion in Animal Experiments. H. Presser and R. Stahl.—p. 559.
Neurologic Psychiatric Investigations on Boxers. E. Jokl and E. Guttmann.—p. 560.
*Thrombopenic Purpura Following Medication with Iodine. H. Dennig. —p. 562.
Thrombopenia Following Angina. E. Jacobson.—p. 562.
New Glucoside of Digitalis Lanata in Circulatory Therapy. S. Dietrich and H. Schwiegk.—p. 563.
Conservative Therapy of Hallux Valgus. G. Jarecki.—p. 566.
Definition of Term Disease. A. Krecke.—p. 567.
Care and Treatment of Teeth During Childhood. G. Fischer.—p. 570.
Disturbances of Nasopharynx. S. Gräff.—p. 573.
*Vermiform Appendix in Prodromal Stage of Measles. W. H. Schultze. —p. 576.
Cutaneous Changes During Suprarenal Disturbances. P. Mulzer and H. Schmalfuss.—p. 577.

Thrombopenic Purpura Following Medication with Iodine.—Of eight patients with thrombopenic purpura, observed by Dennig in the course of a year, two had previously received iodine and in a third the iodine metabolism was disturbed by the presence of exophthalmic goiter. The author calls attention to two reports in the literature concerning patients with exophthalmic goiter who developed purpura following iodine therapy. The author does not propound a theory connecting iodine medication with the onset of purpura and, considering the rareness of purpura, he dose not feel justified in warning against iodine therapy, but he thinks that iodine therapy should be avoided in persons who have had purpura.

Vermiform Appendix in Prodromal Stage of Measles.—Schultze relates the clinical history of a girl, aged 10, who was subjected to an appendectomy because of symptoms indicating appendicitis. The appendix showed old adhesions and the lymph nodes of the mesenterium were swollen, but there were no signs of acute appendicitis. Histologic examination revealed numerous extremely dark-stained giant cells. He recalled recent reports by Finkeldey and by Fischer showing similar changes in the appendix, when in both instances the appendix had been removed during the prodromal stage of measles. On this basis, he diagnosed the case as measles, and he was told that the child had actually developed an exanthem typical for measles. Warthin and Finkeldey have observed similar giant cell formations in the tonsils during the prodromal stage of measles. Since his is the third case in which the giant cells were found in the appendix during the prodromal stage of measles, he thinks that it can be considered typical. The significance of this sign is, however, not fully understood as yet. The author considers two possibilities: the change is a direct result of the unknown virus of measles, in which case the tonsils and the appendix could be considered the port of entry of the virus, or the change is due to a reaction of sensitivity. Finkeldey and Fischer incline to the latter assumption. A final decision will not be possible until it is known whether the other lymphatic tissues show similar changes or whether the changes are limited to the tonsils and the appendix. The fact that the same changes occur in the tonsils and in the appendix favors the idea of relationship of these organs.

Zeitschrift für Krebsforschung, Berlin

39: 1-92 (April 20) 1933

Present Status of Six Year Old Carcinoma Strain in Vitro. A. Fischer, M. Fischer and A. Hollmann.—p. 1.
*Scar Formation of Neoplastic Cutaneous Ulcerations by Local Application of Insulin. S. F. Gomes da Costa.—p. 5.
Investigations on Sarcoma-Producing Virus in Mice. A. Besredka and L. Gross.—p. 12.
Transplantable Mouse Sarcoma: Specific Infectious Disease. A. Besredka and L. Gross.—p. 17.
Oxidocatalytic Action of Body Fluids in Cancer. L. Karczag.—p. 23.
Experimental Studies on Relation of Cancer to Liver. L. Karczag, L. Németh and C. Sellei.—p. 26.
Bellow's Tomato Juice Tumors. M. Brandt.—p. 30.
Experiments with Culture in Two Mediums. H. Grossfeld.—p. 36.
Problem of Increase in Cancer. E. Dormanns.—p. 40.
Biologic Significance of Antilytic Factors in Serum of Cancer Patients. K. Stern and R. Willheim.—p. 54.
Mitogenic Radiation of Carcinoma of Cervix Uteri. J. Klenitzky.—p. 60.
Formation of Metastases Following Intravenous Injection of Carcinomatous Ascites Fluid from Mice and Rats. E. Wibeau.—p. 66.
Susceptibility of Rat Testes for Flexner-Jobling Carcinoma. E. Wibeau. —p. 74.
Production of Rat Sarcoma by Means of Mouse Sarcoma Virus. A. Besredka and L. Gross.—p. 77.
Ciliated Epithelium Cyst of Liver. W. Dullin.—p. 80.
Interrelations Between Simultaneously Developing Inoculation Tumors and Internal Factors in Tumor Growth. S. Konsuloff.—p. 83.
Relative Specific Chemotherapy of Cancer by Disintegration Products of Tumors. R. Werner and H. Winter.—p. 89.

Scar Formation of Neoplastic Ulcerations Following Local Application of Insulin.—Gomes da Costa discusses the increased reactivity of cutaneous neoplasms to roentgen rays after a preliminary local application of insulin and reports the histories of five patients in whom small neoplastic ulcerations on the outside of the nose were healed by the application of an insulin ointment of a concentration of 20 units per gram. In three of the patients the biopsy revealed a basal cell carcinoma, and in two a squamous cell epithelioma.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1933

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SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "ME," Medical Economics; "ab," abstract; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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SOCIETIES

Acad.—Academy	*M.—Medical*
Am.—American	*Med.—Medicine*
A.—Association	*Nat.—National*
Coll.—College	*Phar.—Pharmaceutical*
Conf.—Conference	*Phys.—Physicians*
Cong.—Congress	*Rev.—Revision*
Conv.—Convention	*Ry.—Railway*
Dist.—District	*S.—Surgical*
Hosp.—Hospital	*Soc.—Society*
Internat.—International	*Surg.—Surgery*
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